FORESTS

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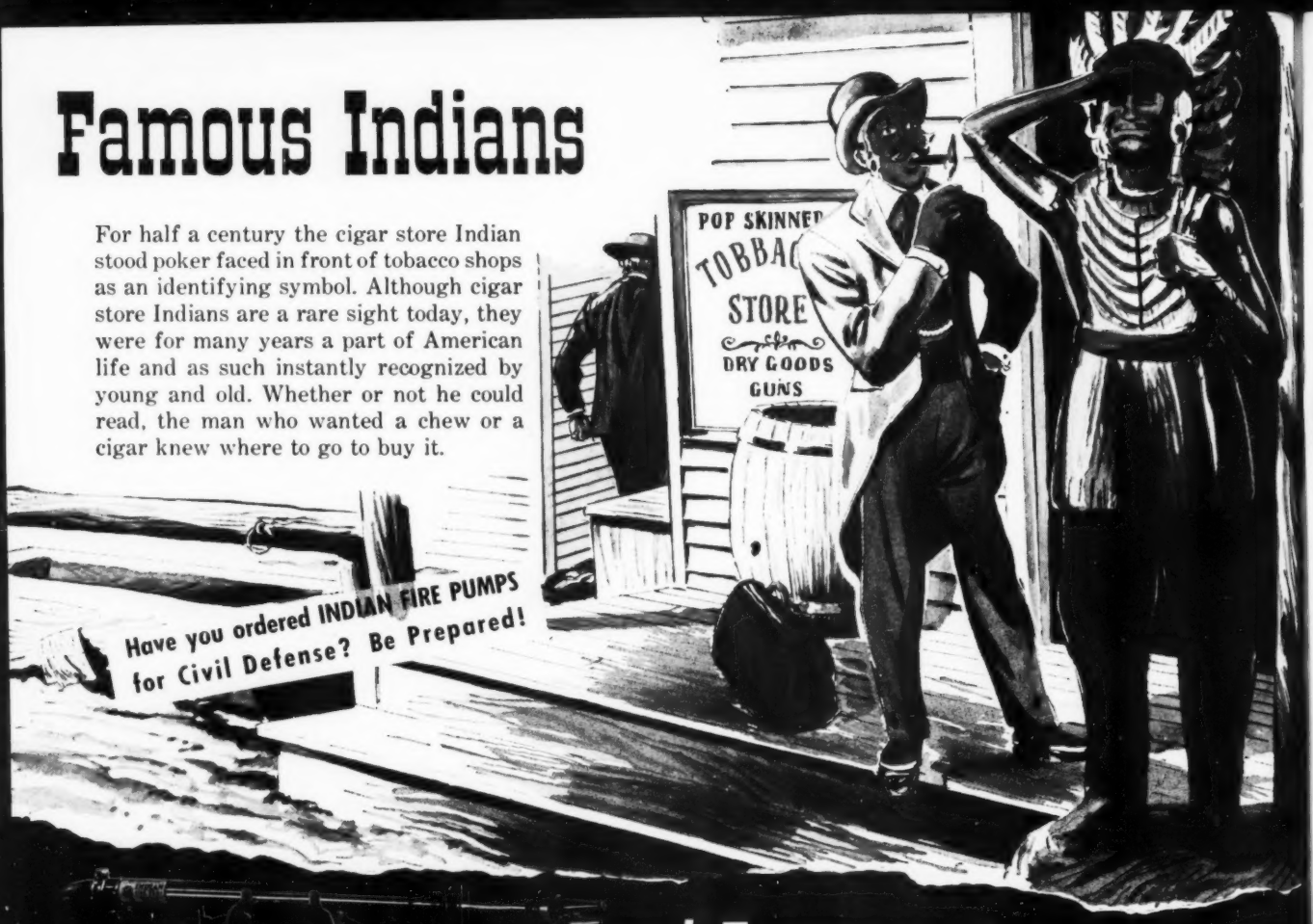
For half a century the cigar store Indian stood poker faced in front of tobacco shops as an identifying symbol. Although cigar store Indians are a rare sight today, they were for many years a part of American life and as such instantly recognized by young and old. Whether or not he could read, the man who wanted a chew or a cigar knew where to go to buy it.



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Widely used for slash disposal, burning right of way, etc. 1-gal. tank. Brass feed pipe. Strong construction. Designed for fire deparment backfiring work.

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American FORESTS

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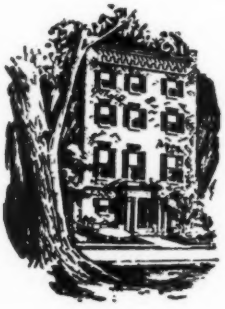

The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

CONTENTS

Cover

On this month's cover we feature a western North Carolina scene, typical of those to be enjoyed by members attending the 77th Annual Meeting of The American Forestry Association in Asheville, October 12-15. Mile-High Overlook near Waynesville was the vantage point for this photo taken by Sebastian Sommer of the North Carolina News Bureau, Department of Conservation and Development. At the extreme left is Mt. Mingus and Newfound Gap, in the center is the Sawtooth Range and on the right is Mt. Guyot—all on the North Carolina-Tennessee state line.

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American FORESTS Forum

Looking Ahead — Coincidental with AFA's 77th annual meeting October 12-15 in Asheville, North Carolina, *American Forests* next month will accent the Tarheel State's many unusual features. A four-color photo of a Blue Ridge Parkway fall picnic scene will grace the cover of our big anniversary issue. Inside there will be a special North Carolina section, including articles on the Champion Paper and Fibre Company, state parks, the Cherokee Indian reservation, Coweeta watershed studies, Hofmann Forest, and other attractions. In addition, *American Forests* will offer its usual variety of features and topical articles.

Among Our Authors—*NLMA: Then, Now and Tomorrow* (page 6) was written by LEO V. BODINE, recently appointed executive vice-president of the 50-year-old National Lumber Manufacturers Association. MATHILDA REED's *Carolina's Halo of Haze* (page 10) is a vivid word picture of the Great Smoky Mountains. She is a Jacksonville, Florida writer. HOMER FINE of Lincoln, Nebraska offers *Nebraska's Man-Made Oasis* (page 12), the story of the nation's only artificial forest, half a century old this year. *Grandpa Was a Logger* (page 14) is the work of fiction collaborators JOHN D. HILL and ROBERT C. HILBERT. *Blood Will Tell* (page 18) is authored by WILLIAM B. GREELEY, internationally known forestry figure and vice-president of the West Coast Lumbermens Association. The story is a tribute to James G. Eddy, a pioneer in forest genetics. *Texas Big Thicket* (page 22) is Houston writer ROGER SHELDON'S description of the awesome Lone Star State forest area. ELLIS JOHNSON, conservation-minded Chicago writer, offers *Time to Get Together* (page 20), a plea for cooperation between service clubs and conservationists. HAROLD OLSON, American Forest Products Industries representative in Portland, Oregon, is author of *Cheating the Beetles* (page 25). The story concerns sanitation-salvage logging. *Termites, An Unnecessary Evil* (page 26) is another informative article by HENRY B. STEER, economist with the U. S. Forest Service in Washington, D. C.

A Visitor—Alice Stuart, who holds one of the 28 forestry degrees ever earned among the fairer sex (*Foresters, Fair,* December 1950), paid us a visit recently. Now living in Fairbanks, Alaska, the Territory where she held her most recent forestry job, she has compiled a week-by-week Alaska Calendar containing 56 photos depicting beauty found only in Alaska. She plans to print these calendars each year and market them in the States.

Our Readers Say—Verne D. Bronson, chief forester for the Tree Farm Management Service, Eugene, Oregon makes a sage observation below in elaborating on the President's letter to members which appeared on page 35 of the June issue:

Won't you reconsider your statement "And, of course, you know that floods are due mainly to unwise deforestation"? There are many other factors which create flood situations. Many watersheds are primarily agricultural or grazing lands and have never been heavily forested. Certainly "unwise deforestaion" cannot be blamed for floods there.

In the Willamette Valley of Western Oregon we have extensive timbered watersheds. Our greatest floods of record were prior to the start of extensive logging operations in the Willamette River drainage with the alltime high water stage recorded in 1861. Certainly that could not be blamed on unwise deforestation.

Even our heavily forested watersheds have floods when subjected to prolonged heavy rains after the ground is saturated or when a warm "Chinook" rain causes rapid melting of a heavy snow pack. Unwise deforestation has contributed to floods in many areas, but a greater contribution to flood damage has been unwise land use by development of residential and industrial areas on natural overflow lands along rivers.

As a member of AFA I am vitally interested in conservation of trees, soil and water. As a practicing forester interested in good forest management for more than half a million acres I am aware that floods occur even where there has been no deforestation.

I join you in criticism of unwise deforestation or any other mis-use of the soil. I think you should give equal prominence to other land abuses which contribute to flood peaks. You should recognize that many flood areas caused no concern before men constructed improvements on natural overflow lands and drainageways.

PROGRAM for AFA'S ANNUAL MEETING

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

Asheville, North Carolina, in the heart of the land often described as the cradle of American forestry, will be host to The American Forestry Association's 77th Annual Meeting, October 12-13-14-15. The meeting will be held in conjunction with that of the North Carolina Forestry Association. The meeting has been timed to take full advantage of fall coloring, and reservations are now being accepted at the Battery Park Hotel, headquarters for activities. Details of the program are as follows:

■ SUNDAY, OCTOBER 12

Registration and informal gatherings are planned for Sunday, October 12 by Mr. Horace C. Jenkins of Gwynedd, Pennsylvania, Chairman of the Association's Membership Committee.

8:00 P. M.

"Natural History Highlights in the Great Smokies"—illustrated—Arthur Stupka.

■ MONDAY, OCTOBER 13

9:30-12:00 A. M.

Invocation, Dr. E. H. Blackard, Pastor of the Central Methodist Church of Asheville, N. C.

Presiding, Don P. Johnston, President, The American Forestry Association, Wake Forest, N. C.

Welcoming Addresses, Hon. W. Kerr Scott, Governor of North Carolina and Hon. Earl W. Eller, Mayor of Asheville

Response, Don P. Johnston and Roger W. Wolcott, President, North Carolina Forestry Association, Raleigh, N. C.

"Forests and Waters,"Dr. R. E. McArdle, Chief, U. S. Forest Service, Washington, D. C.

"Southern Forestry Today," Capt. I. F. Eldredge, Consulting Forester, New Orleans, La.

"Water and Industrial Development of the South" Norman A. Cocke, Vice President, Duke Power Company, Charlotte, N. C.

General discussion.

2:00-4:00 P. M.

Presiding, Roger W. Wolcott.

Panel Discussion, "Forests and Water."

Moderator, Lloyd E. Partain, "The Country Gentleman," Philadelphia, Pa.

"Forest Management and Research on National Forests in the Southern Appalachians for Watershed Protection," Charles A. Connaughton, Regional Forester, Region 8, U. S. Forest Service, Atlanta, Ga.

"Importance of Water and Forests to the Future of the Power Companies," Carlton J. Blades, Chief Forester, Duke Power Company, Charlotte, N. C.

"The State's Interest in Watershed Management," George R. Ross, Director, Department of Conservation and Development, Raleigh, N. C.

"Working with Nature," Bryce C. Browning, Secretary-Treasurer, Muskingum Watershed Conservancy District, New Philadelphia, Ohio.

"Some Aspects of Water Conservation and Use in the Tennessee Valley," Dr. Harry A. Curtis,, Director, Tennessee Valley Authority, Knoxville, Tenn.

General discussion.

7:30 P. M. BANQUET

Invocation, The Rt. Rev. M. George Henry, Bishop of the Episcopal Diocese of Western North Carolina, Asheville, N. C.

Toastmaster, Reuben B. Robertson, Chairman, Champion Paper and Fibre Company, Canton, N. C.

Speaker, Erle Cocke, President, The Fulton National Bank, Atlanta, Ga., "A Banker Looks at Forestry."

Introduction of guests, presentation of Conservation Awards, door prizes, entertainment.

■ TUESDAY AND WEDNESDAY, OCTOBER 14 & 15

Tuesday and Wednesday, you may choose from several outstanding field trips, including (1) Coweeta Hydrologic Laboratory, (2) Great Smoky Mountains National Park and Cherokee Indian Village via the Blue Ridge Parkway, (3) Pisgah National Forest, Biltmore Plantations, and The Champion Paper and Fibre Company, and (4) Mt. Mitchell State Park and Biltmore House and Gardens.

Judging from advance bookings we know we are going to have an unusually large attendance and you are urged to get a letter off today to the Battery Park Hotel, Asheville, North Carolina, making your room reservation. Rates are $4-$7 single, and $7-$12 double, European plan.

WASHINGTON LOOKOUT

By G. H. COLLINGWOOD

On first reading, the planks from the Democratic and Republican party platforms dealing with forestry and the conservation of natural resources appear to indicate a disarming similarity.

The Democratic Party favors sound, progressive development of the Nation's land and water resources, while the Republicans vigorously advocate a full and orderly program for the development and conservation of our natural resources. The Democratic platform points with pride to the policies and programs inaugurated by Presidents Roosevelt and Truman, and to their continued extension. The Republican platform is largely an expression of opposition, directed more against methods than objectives.

However, a study of the planks in the two platforms dealing with forests and public lands reveals some fundamental differences.

The words "traditional Republican public land policy, which provided opportunity for ownership by citizens," contrast sharply with the Democratic boast of having extended and vastly improved the parks, forests, et al. They recall the first half of the New Deal period when many citizens chose to sell their cut over forest lands to the federal government. This acquisition program built up through the years until nearly 15,800,000 acres were added to the national forests. The cost exceeded $61,000,000.

Questions soon arose as to the advisability of transferring such large areas to federal ownership. Among the first to voice doubts was the National Lumber Manufacturers Association.

More recently, Representative Jamie L. Whitten, of Mississippi, speaking as chairman of the House Subcommittee on Appropriations for the Department of Agriculture, expressed fears lest Forest Service holdings may become so extensive that local communities will have trouble raising sufficient tax revenue to operate. As a result, federal purchases during the current fiscal year are limited to a few holdings within the boundaries of national forests.

The problem of raising tax revenue sufficient to operate local communities is brought up again in the Republican plank proposing an "impartial study of tax-free federal lands . . . to determine their effects on the economic and fiscal structures of our states and local communities."

Neither the problem nor the proposal is new. The national forests, and the Oregon and California revested lands each return to the local governments a specified percentage of their gross receipts. The actual amount varies from year to year in accordance with the volume of business conducted on the forest. Accordingly, the counties may have fat years and lean years.

The real bone of contention, however, is with the established pattern under which the proportion returned to the O and C counties is more than twice that returned to the counties in which national forests are located. Numerous and repeated efforts have been made to correct or revise these payments, but thus far the Congressional bills have never progressed to the decisive vote. So much attention at this stage of the political campaign seems to serve notice that one or both of these problems will again be considered in the 83rd Congress.

Another touchy point revealed in the Republican platform is the lack of uniform policy for the administration of grazing on government owned lands. This is particularly a western problem which applies to grazers whose stock eats summer range on the national forests and feeds through the rest of the year on public lands administered under the Taylor Grazing Act of June 28, 1934.

That many stockmen believe their rights and privileges are more adequately safeguarded on range administered by the Bureau of Land Management than on the national forests is indicated in the draft of a bill circulated during the past year or more by the Stockmen's Grazing Committee. The bill was never introduced in the Congress, but language in the Republican platform indicates it may become a major issue during the next session of Congress.

The Democratic proposal to in-

(*Turn to page* 47)

FOREST AND PUBLIC LANDS PLANKS

DEMOCRATIC

We seek to establish and demonstrate such successful policies of forest and land management on federal property as will materially assist state and private owners in their conservation efforts. Conservation of forest and range lands must be protected and used wisely in order to produce a continuing supply of basic raw materials for industry, to reduce damaging floods and to preserve the sources of priceless water.

With adequate appropriations to carry out feasible projects, we pledge a program of forest protection, reforestation projects and sound practices of production and harvesting which will promote sustained yields of forest crops.

We propose to increase access roads in order to improve cutting practices on both public and private lands.

On the public ranges we pledge continuance of effective conservation and use programs, including the extension of water pond construction and restoration of forage cover.

. . . We have extended and vastly improved the parks, forests, beaches, streams, preserves and wilderness areas across the land . . . we pledge continued efforts to improve all recreational areas.

REPUBLICAN

We favor restoration of the traditional Republican public land policy, which provided opportunity for ownership by citizens to promote the highest land use. We favor an impartial study of tax-free federal lands and their uses to determine their effects on the economic and fiscal structures of our states and local communities.

In the management of public lands and forests we pledge the elimination of arbitrary bureaucratic practices. To this end we favor legislation to define the rights and privileges of grazers and other cooperators and users, to provide the protection of independent judicial review against administrative invasions of those rights and privileges, and to protect the public against corrupt or monopolistic exploitation and bureaucratic favoritism.

See editorial page 48.

NLMA

Then, Now and Tomorrow

The National Lumber Manufacturers Association, half a century old this year, reflects the trials, achievements and ambitions of a vital industry

By LEO V. BODINE

FIFTY years ago, the first meeting of lumber's national organization was called to order in St. Louis by E. C. Fosburgh of Norfolk, Virginia. On May 8, 1952, in St. Louis, many of the National Lumber Manufacturers Association members could recall the rugged individuals of a rugged industry who attended that first meeting. Weighing 1952 against 1902, they saw no less evidence of the same individualism, same purposeful approach to problems and an unchanged restless aggressiveness.

The NLMA is a federation of regional lumber manufacturers' associations, representing 16 major groups in the industry. Its activities center around building codes, national affairs, forest conservation, statistics, engineering, research, trade promotion, consumer information, taxation, economics, education and public relations.

For the record, it should be noted that lumber began its service of person and country in America long centuries ahead of the 1902 meeting of principals of the nation's eldest venture in private enterprise. Traditionally the industry has been fiercely competitive, within itself, as well as with rival building materials.

As such it has known more of lean years than of plenty, but always has produced an abundance of products. Periodically, critics have assailed it, giving tongue to prophecy of an inglorious end, forests exhausted, land laid bare. Time, the remorseless foe of the shortsighted, has disproved each prophecy.

Executive Vice-President Leo V. Bodine took over NLMA helm in May this year

There has been no dearth of disturbing influences in NLMA's life span. The industry has been beset upon the one hand by petitioners for government ownership, or regulation of forest lands, and upon the other by competitors determined to wrest away the markets that make tree growing investments possible.

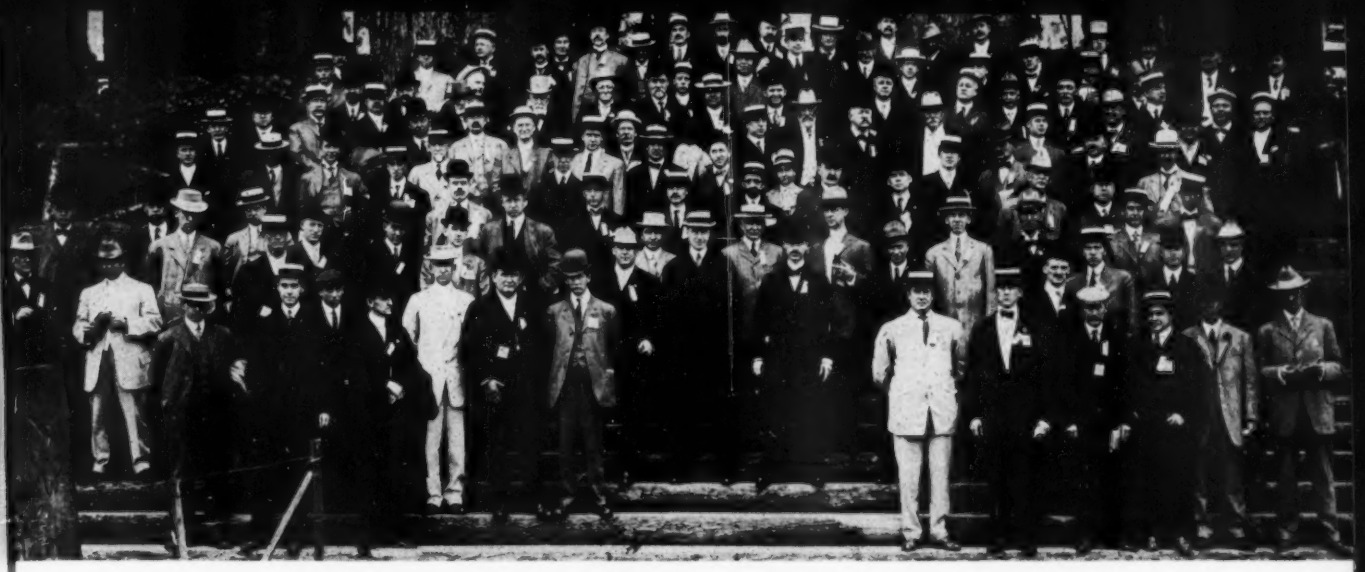
Looking this bit of hard realism in the eye, it can be observed that a long and enviable record of abundant product production, plus development of tree growing plans that assure a continuing abundance of products, has quieted some of the critics who previously viewed in confident alarm.

Similarly, the hard-working competitor (lumbermen say, "God bless him because he forces the pace of progress") has been held in check through performance in the way of better products, better service to customers, and better merchandising.

On the first count, lumber expects to win the battle to retain ownership of its lands, minus a complete socialization of U. S. industry. On the other count, it proposes to continue warfare with rival materials by accelerating the pace of product development, improved manufacturing techniques and pursuit of new markets.

There was much to reminisce about at St. Louis in 1952. Rather ironically, however, there was perhaps more emphasis laid upon the possibilities thinly silhouetted against the horizon of the future than upon happenings contoured in the afterglow of the past. Speakers tinted chronicles of accomplishment with prediction, and no one questioned that it was not deserved license in an industry old in service, young in ideas.

Evident, too, in the very membership of NLMA is the fact that lumber has as well served the pattern of that which is best about America by affording opportunity to the entrepreneur as it has in furnishing the products of wood that enrich the lives of every person, every hour of every day.



A lot of progress has taken place in the 41 years that separates these two photos. Top picture was taken at 1909 meeting in Seattle, picture below at St. Louis golden anniversary meeting

Wielding the gavel at St. Louis, May 8, 1952, was John B. Veach, President of NLMA and one of lumber's best known citizens. It may have been in his thoughts when he mounted the rostrum that the past is prologue; it was in his speech a short time later when he said:

"I believe I can look forward in the lumber industry 20 years and see 50 percent of our production in products of which we do not even dream today."

Though the statement may have been startling, lumber's progress indicates that it is true.

Consider that the magic of chemistry is transforming the components of wood into new items of food, fabrics, furniture, preservatives, plastics, fertilizer, purifiers, absorbents, adhesives, explosives, medicinals, waterproofing and flameproofing compounds, acids, resins, paints, varnishes, oils and so on, ad infinitum. Almost every day some new wood product or use is discovered in the laboratory. Perhaps at this very moment another derivative as great as rayon or cellophane is in the test tube.

Consider that wood is now converted into plastic form for hundreds of everyday uses. We find, for example, the lignin plastics suitable for storage battery boxes, distributor heads, electrical appliance parts, knobs, ash trays, laminate sheet, wall board, bathroom tiling, refrigerator doors and sewing machine cases.

The cellulose plastics are used for fountain pens, liners for safety glass, photographic film, combs and brushes, dolls and toys, piano keys, slide fasteners, automobile steering wheels, table radio cases, fishing plugs, toilet articles and a great va-

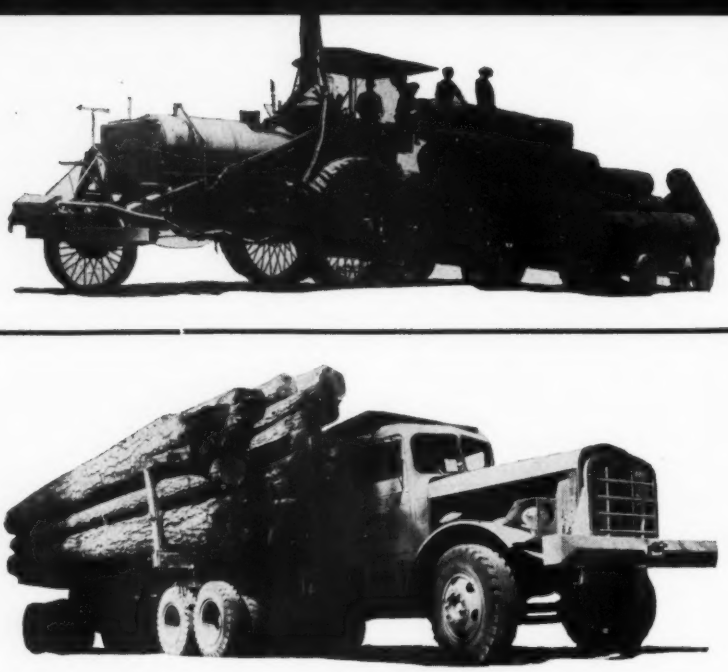
riety of other uses. The principal raw material of the ever-expanding plastic industry is *wood*.

Consider that today, in some of our larger plants, most of the tree goes into commercially useful products. Integration of manufacturing operations is commonplace. Logs may be made into lumber, woodpulp, or plywood. Some grades of lumber then may be processed into flooring or small dimension material. Other grades may be refined by removal of defect and utilized in boxes, small wood products or laminations.

Edgings and slabs may go into ground wood for moulded or pressed products such as fibreboard, or may be chipped for the manufacture of pulp. Bark may be converted into plastic powder, mulch or fertilizer, while sawdust and shavings may come out in compressed form for fuel.

USFS photo

1913-model fire patrol set pattern for more modern protection methods



THEN AND NOW: The steam-driven tractor, top, quite the thing in its day, looks slow and cumbersome beside today's sleek, powerful logging truck

Consider that the hardwood dimension, flooring, and veneer industries have developed to the point where products may be manufactured from logs and rough boards to any pre-fabricated stage desired by the user, and subject to uniform standards. Laminated lumber products produced in hardwood dimension plants have been developed to a high degree of usefulness for furniture, cabinets and many other purposes.

Consider that progress has been encouraged by many improvements in mechanical equipment. Power saws permit lower stumps. Modern logging equipment permits prelogging and relogging of stands. New log loaders cut loading time drastically. The hydraulic barker reduces waste in sawing lumber and damage to machinery. Harder metals have produced better cutting tools. Thinner gauge saws have reduced waste. New fast planers, knot-sealing and lumber patching machines, lift trucks, Pres-to-log machines—these and many more items of new equipment add up to dynamic progress.

Consider that newly developed glues and improved techniques of lamination make possible the use of small pieces to make large timbers that are stronger and more durable. New glues and new industry designed equipment can fashion in two minutes a better board (of any desired width) from narrow pieces than its counterpart sawed from a log which took 200 years to grow. Proper air and kiln drying, modern preservative treatments, and fire retardent chemicals are providing better lumber products.

Consider that the introduction of the TECO (Timber Engineering Co.) timber-connector system of construction has caused timber to become recognized as an engineering material and has largely resulted in the building up of a timber fabrication division in the industry comparable to the steel fabrication business. There are today more than 60 firms in the United States which can deliver to contractors at the job sites prefabricated timber roof trusses and framing all ready to erect.

In addition, with the aid of TECO connectors, many contractors do their own fabricating at the job sites. By using the TECO system of construction more than 400,000 tons of steel were saved for essential war production during one year of World War II. Over 150,000 buildings have been built with the TECO connector system of construction.

Consider that today softwood lumber is sold in large volume with the grade stamped on each piece or under certificates of inspection. The American Lumber Standards provide the criteria for the preparation of softwood grading rules. The National Hardwood Lumber Association serves as a clearing house and governing body for hardwood grading rules.

Consider that the Tree Farm, Keep Green, and Cash Crops programs have grown out of our desire to stabilize and make permanent our forest resources, without which there would be no lumber industry. They represent the collective efforts of the lumber and paper interests, operating through the American Forest Products Industries, Inc., to encourage tree growing and the protection and wise use of our forests. The period 1940 to 1952 has witnessed the greatest expansion of the practice of forestry on private lands in our nation's history.

The story of the lumber industry and its National Association from 1902-1952 is big and inspiring. It must here be condensed to little more than a bare outline. It is a distinct honor to be able to pay trib-

At 1952 meeting are first row, l. to r., Baker Fullerton, W. R. Warner, Leo V. Bodine, Walter S. Johnson, Dr. J. A. Hall; second row, John Avery, Omar Hilton, C. C. Crow, E. Broderick, H. Willens, J. Prestridge, E. D. Johnson, W. Simmons, B. Green, Mrs. B. Green, S. Van Fullaway, Jr.

ute, in this venerable publication of forests and forestry, to the lumber industry and to its leaders of the past and present.

The 16 member associations have much in common. They are united in a desire to acquaint the public with the superior qualities of wood; to provide the consumer with an ever-better product; to help stabilize the lumber industry and safeguard its future; to grow more trees and to protect the nation's forests from fire, insects and disease; to provide the greatest possible assistance in strengthening the nation's defenses; and to seek the best possible cooperative relations between government and industry.

Most of the 16 associations have established grading rules for the lumber or other products they represent and maintain or sponsor inspection services to see that rules are adhered to. All carry on trade promotion as a major part of their work, issuing pamphlets and other literature describing the characteristics, qualities and uses of products. There is also a growing use of motion pictures, exhibits, and radio and television networks.

Headquarters building of NLMA at 1319 18th Street, NW, Washington, D. C. NLMA occupies second and third floors, TECO the fourth, AFPI the first

Technical departments are maintained to develop new or better uses for products and as an aid or service to buyers. Better sawmill, seasoning and storage practices are stressed. Statistical information is compiled on a regular and continuing basis for the use of members. Research covers such aspects as transportation and freight rates, domestic and foreign markets, economic trends, competitive materials, and wood technology. Scientific forest management and improved logging practices are stressed.

The member associations of NLMA have a big job to do and are performing it well. NLMA augments their work at the national level in the categories previously mentioned.

A subsidiary of NLMA is the Timber Engineering Company, commonly called TECO. The objective of this service organization is to develop and promote new uses and promote more economical utilization of wood, forest products and their derivatives. Its activities include lumber sales promotion, engineering services, timber structure designing, timber testing, product development and the maintenance of a well-equipped research laboratory for the purpose of conducting wood research for private firms, government agencies and industry associations, and providing educational services.

(*Turn to page* 34)

Carolina's Halo of Haze

Bluish haze which gave the Great Smoky Mountains their name is a shifting crown for western North Carolina's lofty peaks

WESTERN North Carolina in autumn is a mosaic panorama of thousands of towering peaks clothed in gay tapestries of red, brown and gold interspersed with blue waterfalls and peaceful valleys.

Within a day's journey of 55 percent of the nations population, this area comprising the Great Smoky Mountains National Park, Pisgah and Nantahala National Forests, Mount Mitchell State Park and the Blue Ridge Parkway, was visited by more than 5,000,000 persons last year.

From September through November it is a riot of color, but it is from October 1-20 that the foliage is at its peak. It is claimed that nowhere on this continent is there a more varied and vivid landscape. This is undoubtedly due to the wide range of flora and the crisp cool mornings followed by sunshine. Botanists have classified 148 varieties of trees and about 1200 other plants growing in this region.

In the heart of this scenic wonderland is Asheville, the capital city of the mountains. It stands on a plateau 2300 feet high which once was the hunting ground of two enemy Indian tribes—the Shawnees and the Cherokees.

Founded in 1794, and named for two men, Samuel Ashe, an eminent jurist, and John Ashe, a soldier, it soon became a tobacco growing and marketing center. Known also for its fruit crops and a fine all-year climate it rapidly attained widespread fame as a popular summer and winter resort.

Today, Asheville is a thriving metropolis with a population of 85,000. It is a beautiful city surrounded by mountains, lakes and waterfalls. The home of Thomas Wolfe, Asheville-born novelist, and the O'Henry Memorial Library, named in honor of O'Henry (William Sydney Porter), the well-known short story writer, are located here.

Adjoining Asheville is the famed 12,000-acre Biltmore Estate, with its extensive formal and informal gardens. Inside the palatial home, built by George W. Vanderbilt at the turn of the century, are rich tapestries, rare paintings, and other works of art including an extensive library.

This estate, the cradle of American forestry, is a fine illustration of sound woodland management. A forestry program was started here in 1892 by the late George W. Vanderbilt when he employed Gifford Pinchot as his first forester for the estate. He planted tree seedlings on worn-out and eroding land and removed cull trees left in the woods by previous logging operations.

Pinchot, who later became the first chief of the U. S. Forest Service and governor of Pennsylvania, was suc-

Asheville, capital city of the mountains, is the site for The American Forestry Association's annual meeting October 12-15

By MATHILDA NEWMAN REED

Nor.h Carolina Conservation and Development Department photos

Newfound Gap, one of the scenic wonders on North Carolina-Tennessee border

ceeded in 1895 by C. A. Schenck, whom Vanderbilt brought from Germany. Schenck in 1898 founded the Biltmore Forestry School which shares with Cornell the distinction of offering the first formal forestry instruction in the United States.

Today, there are approximately 500 acres of white pine on the estate many of which were planted 60 years ago and which now measure 20 inches in diameter and tower 100 feet above the forest floor.

The Pisgah National Forest, named after Mt. Pisgah, surrounds Asheville and extends over an area roughly 100 miles long and 40 miles wide. About 467,000 acres are in government ownership.

This area is accessible through a network of paved roads and some 600 miles of trails, including part of the Appalachian Trail, which is the longest hiking trail in America, extending along the crest of the Appalachians from Mt. Katahdin in Maine to northern Georgia.

Within this forest are 14 public recreation areas which have sanitary facilities, open grates, safe water supply, tables and shelter from rain. Most of them provide for camping; some have lakes and other facilities for swimming.

Recreational opportunities are many and varied, including fine fishing. The yearly managed hunts for deer, bear, and smaller game draw large numbers of sportsmen from over the nation.

The beautiful Blue Ridge Parkway, 477 miles long, follows the crest of the Blue Ridge range. With connecting state and federal highways, it links the Great Smoky Mountains National Park in North Carolina with the Shenandoah National Park in Virginia.

This mountain-top boulevard is unlike any other in the world. Not only does it climb more than a mile high near Mt. Mitchell, but burrows through eight tunnels, the longest near Craggy Gardens being 775 feet. A short distance from Asheville, mile-high Craggy Gardens is a 600-acre garden of crimson rhododendron.

The Parkway is so well engineered that speeds up to 45 mph are permitted. Safe speeds are marked on all curves. There are many turn-offs. Highways are marked for convenience of motorists wishing lodging, food or car service.

More than 223 mountains exceeding 5000 feet in height tower over western North Carolina. The highest of these, the rooftop of Eastern America, is Mt. Mitchell. It is

Famed 12,000-acre Biltmore Estate, with its palace-like home, adjoins Asheville

reached by a modern two-lane highway just off the Parkway at Swannanoa Gap. At the crest is Mt. Mitchell State Park on which there is an observation tower commanding a 360-degree view of the Blue Ridge and Great Smoky mountains, a vast cyclorama of surrounding mile-high mountains. Picnic and camping facilities including outdoor furnaces are available here.

Nearby is Little Switzerland, a

(*Turn to page* 32)

The forested hillsides make a pretty background for the rows of pine, cedar and other seedling trees in Nebraska's Bessey nursery

Nebraska's Man-Made Oasis

The Cornhusker State boasts the nation's only man-made forest. Ceremonies September 10-14 will mark the plantation's 50th year

By HOMER FINE

Natural reproduction of ponderosa pine proves man has established a true forest

THE only man-made national forest in the country—located deep in the Nebraska sandhills, and including a conifer nursery with a production record of 200 million trees—is half a century old this year.

The Golden Anniversary of the 207,000-acre Nebraska National Forest will be celebrated at Halsey, Nebraska the week of September 10-14, featuring tours through the tree plantations and nursery. There'll be a formal program on Sunday, September 14.

To understand the significance of the forest's 50th birthday to the plains state of Nebraska, let's go back along the pioneer trails of territorial days. Great herds of buffalo roamed over thousands of square miles of native grass prairies before the plow cut its first furrow in the state. The grasslands stretched from horizon to horizon, broken only by occasional hills and streams.

Trees were almost non-existent except for a few hardwoods along river banks, a scattered growth of ponderosa or western yellow pine and eastern red cedar in the northwest, and a fringe of hardwod growth in the southeast along the Missouri river. Early settlers, coming from the forested regions of the east, used much of the native timber, and started experimenting with trees dug from the river bottoms.

A member of the new state's board of agriculture and later United States secretary of agriculture, J.

Sterling Morton, stands out among the leaders of the early tree-planting movement in Nebraska. On his motion the board of agriculture set aside April 10, 1872, as the state's first Arbor Day.

More than a million trees were planted on that day, and although Nebraska is officially the "Cornhusker State," many still call her the "Tree Planter's State." The idea of a special day to encourage the planting of trees in the state's cities and parks and on her farms took hold, and is still observed each spring.

The Nebraska National Forest was established by President Theodore Roosevelt's proclamation of 1902, but as early as 1890 Dr. Charles E. Bessey, for many years professor of botany at the University of Nebraska, had advocated systematic tree planting in the state by the federal government. In 1891 Dr. Bessey succeeded in having the Forest Service, then the Division of Forestry, assist in establishing a small plantation of jack, Scotch and Austrian pine on a sandhill ranch in north central Nebraska.

This successful planting of pines proved the possibility of raising trees in the sandhills. It was still a ten-year fight, however, before the Nebraska National Forest came into being.

Two small areas were finally surveyed and recommended by a party which crossed the state with tents, supplies, a cook, and teams for transportation. One of the areas, situated along the Niobrara river, was named the Niobrara division. The other, farther south between the Dismal and Middle Loup rivers, was named the Dismal division of Nebraska National Forest. The latter was later renamed for Dr. Bessey, as was the tree nursery established near Halsey, Nebraska, in 1902.

The first trees planted in the new national forest, back in the spring of 1903, consisted of jack and ponderosa wildlings from Minnesota and the Black Hills region of South Dakota.

Survivors of that first planting of about 70,000 trees now reach 60 feet into the Nebraska sky, and average 20 inches in diameter. Three to four inches of duff carpet the ground beneath them.

Seedlings now spring up unassisted, indicating that man has succeeded in establishing a true forest in only half a century, on a site where sand dunes once tried to discourage the tough prairie grasses.

Since the initial planting in 1903, 22,000 acres have been permanently planted to trees—mostly ponderosa, jack, Austrian and Scotch pine, and eastern redcedar. The Bessey division contains 96,000 acres of national forest land and the Niobrara division includes 111,000 acres, although foresters figure that only 52,000 acres of the total of 207,000 acres in the entire forest are suited to permanent tree plantings.

That leaves 30,000 acres to be planted, and Russell K. Smith, chief forester in charge of the two divisions, would like to see 1000 acres a year of permanent forest planted until the project is completed.

Experience in the sandhills region has shown that the best planting sites are on the north, northeast and northwest slopes of hills and on rough ridges. Valleys, southern hillsides and gently rolling flats are not planted to trees, but furnish summer range for some 15,000 head of cattle that are grazed on the forest each year.

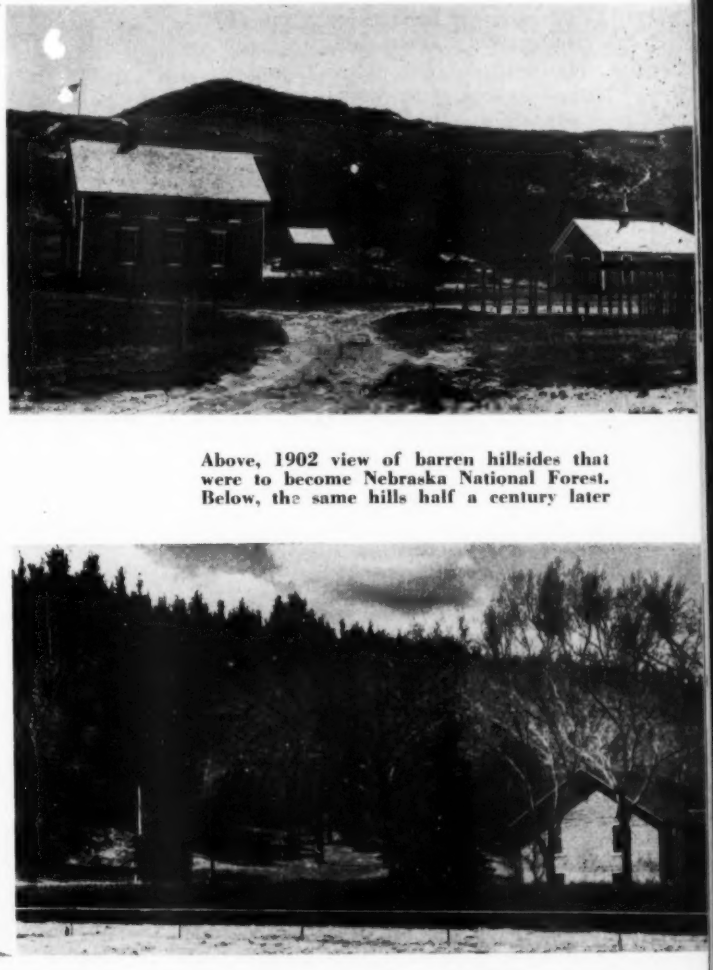
Receipts from grazing permits and the sale of forest products have more than paid the cost of administration and protection of the forest area over the past five years, even with 25 percent of the receipts being turned over to counties in lieu of taxes.

The area was set aside expressly for tree planting, not for grazing, but experience has shown that with proper safeguards in the early life of the trees grazing and tree growth can be carried on simultaneously.

In addition to the advantage to livestock and to the 62 ranchers living adjacent to the forest, grazing helps protect the trees from fire by removing some of the excess grass and making fire lanes more effective.

During the planting of the Nebraska National Forest, much information has been collected on the management of sandhill vegetation through controlled grazing seasons.

(*Turn to page* 30)



Above, 1902 view of barren hillsides that were to become Nebraska National Forest. Below, the same hills half a century later

Grandpa Was a Logger

By JOHN D. HILL
AND ROBERT C. HILBERT

GRANDPA cuffed his shapeless last year's hat far back on his white head and turned his eyes toward Mr. Botts.

"Now, what's this?" he asked.

"This," pointed out Mr. Botts, "is a tract—ahem—a cat."

Grandpa silently strode around the hulking machine and came back beside his boss.

"I'd certainly love to see it on a tar paper roof," said Grandpa.

Mr. Botts snorted. Then Grandpa had to look some more.

"What are you going to do with it?" he inquired softly.

"I intend to skid logs with it," said Mr. Botts. "What else?"

"I thought," muttered Grandpa, "they might be using it to drag you away."

"They? Who?"

"The men with the white suits and the butterfly net," grinned Grandpa. "You know, the boys from the state hospital."

Mr. Botts said something short and not at all polite.

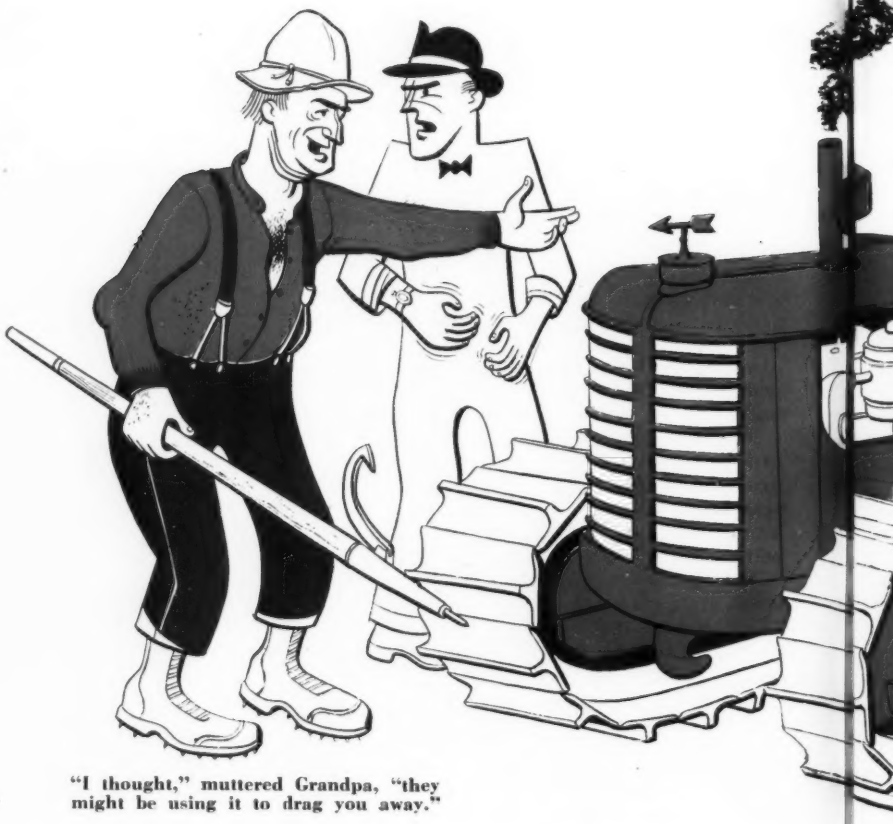
"All right, Bill," said Grandpa. "We've had our little joke. Now seriously, what are you going to do with this mechanical monstrosity?"

"We'll skid logs with it," snapped Mr. Botts.

Grandpa turned to me, thrust a forefinger in his ear, and waggled it. "It's those echoes, Jay," he said. "I keep hearing the same silly words, over and over. Don'tcha hear 'em?"

I grinned, but I couldn't afford to make a wisecrack. At the moment Grandma was in the East, visiting Aunt Helen. And according to a recent letter from her she was very much worried about my being left in White River with only Grandpa to look after me. I was afraid that if I went against Mr. Botts he might ask Grandpa to send me East.

"All right, Mike Sweeney," snapped Mr. Botts. "That's enough. Keep any more of those bright remarks you got to yourself, huh?"



"I thought," muttered Grandpa, "they might be using it to drag you away."

Grandpa looked hurt—a difficult expression for him—but his retort died as a Model T came racketing up to us.

The man who stepped over the door and out was dressed like Mr. Botts in blue-green cruiser coat and pants, and he wore a necktie, with the knot snugged into the precise center of his neatly buttoned collar. He came up quickly with a confident stride. "Well, it's all set, Mr. Botts," he said. "The other two machines are on the way."

"Good," said Mr. Botts. "Joe, I'd like you to meet Mike Sweeney. Mike, Joe Slader."

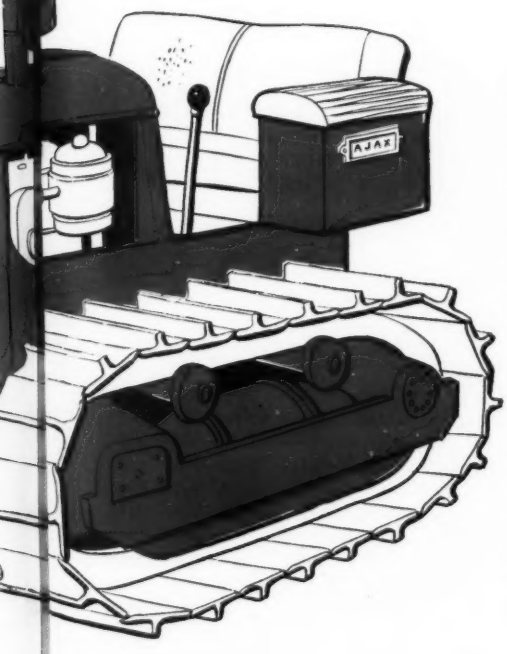
"We've met," said Grandpa with disarming gentleness. "Matter of fact, the last time I saw Mr. Slader I went from sergeant to private without even touching corporal."

The smaller man looked up at Grandpa with an odd expression. "Yes," he said, "I think I remember." A thin note that might have been malice came into his voice. "Out of uniform and insubordination, wasn't it? As I recall, you very nearly got the sack. How are you, Sweeney?"

He made no effort to shake hands, and Grandpa grinned suddenly and wickedly.

"I notice," he said softly, "that your nose did heal straight, after all. That mule I was driving sure did peel you, though."

A woods boss with the bark on, Grandpa took a dim view of Mr. Bott's perambulating "buckets of bolts." But in the end he bowed to—yes, even aided—the march of progress



"Yes," said Mr. Slader. He looked at Grandpa steadily for a long moment. Then with a gesture that was almost dismissal, he turned back to Mr. Botts. "I've got operators lined up," he said, "and a mechanic. We're ready to show these yokels how to log."

Grandpa poked his forefinger in his ear again and looked at me. "Those echoes, Jay," he said. "I keep hearing 'em over and over."

Mr. Botts said, "You just run your horse camp, Mike, and . . ."

"Horse Camp?" gasped Grandpa.

"And the falling and bucking crew." amended Mr. Botts hastily.

"Of course," said Grandpa graciously. "And now if you'll dispose of yon bucket of bolts, let us be lining up a crew and getting on with it. We'll be needing hair-pounders and snipers and swampers, and Dad Johnson's got some fine horses down at his place."

"I'm buying no more horses, Mike," said Mr. Botts.

Grandpa said patiently, "Look, Mr. Botts. This is Mike Sweeney himself talking. I'm your woods boss, remember? I know the timber and I know this country, and while pure modesty forbids me to sound my own horn, it is well known that when Mike Sweeney can't do it, nobody can. And I cannot, Mr. Botts, drag the sticks out by myself—at least not more than one at a time. So do I get the horses, or do we lose the contract?"

"Are you all through?" inquired Mr. Botts.

"Depending on the answers I get," said Grandpa. "Yes."

"I'm buying no more horses, Mike," said Mr. Botts again evenly. "Joe here has convinced me we can yard logs cheaper and faster with the cats. He'll be in charge."

Grandpa moaned, "For the cost of that bucket of bolts you could have bought—"

"You big ape," snapped Mr. Botts, "will you shut up? If you'd been equipped with just ears and no mouth, it would have simplified matters. However, I still make the decisions around here, Mike."

"Not mine, you don't," retorted Grandpa promptly.

Mr. Botts stood half a head shorter than Grandpa. A lean tough whip of a man with a narrow face that suggested inner discipline rather than primness. He said very quietly now, "Mike, it's been a long time. I'm resigned to a certain amount of your babble. But you'll do the job my way or not at all."

The words fell in a dull little pocket of quietness. Grandpa let his eyes slide from Mr. Botts to Joe Slader, and back again.

"Write 'er out," snapped Grandpa. "Give me my time."

A subtle tautness showed on Mr. Botts face. For a long instant he seemed to hesitate. Then he took a checkbook from an inner pocket of his cruiser coat and wrote with a violent plunging hand. He ripped the slip carelessly from the book and handed it to Grandpa.

Grandpa took the check without looking at it, carelessly crumpled it and rammed it into his pocket as he wheeled away. Mr. Botts stood with his hand outstretched for just a fraction of a second. Then he, too, turned away. Joe Slader's gathering grin suddenly wavered. He looked away and said, "Well . . ." Mr. Botts said nothing. Grandpa and I tramped off without looking back.

"Gee, Grandpa," I said as we climbed into our old skitterbuggy, "what will we do now?"

Grandpa said, "Bah! And they call themselves loggers."

At the bank Mr. Gibbs, the president, came out of his office himself to inform Grandpa that the check Mr. Botts had written was no good. Then he turned a rather interesting shade of green. Probably because his necktie and neat linen coat lapels and part of his shirt front were neatly gathered in one of Grandpa's large fists. He seemed to be having trouble with his enunciation, too. At least his mouth opened and closed soundlessly for some time before he said anything, and then it was only a sort of dying fish noise which made the whole thing rather pointless.

"Speak up, man, speak," said Grandpa, relaxing his hold.

Mr. Gibbs gasped for air. He massaged his neck tenderly as he said hoarsely, "The Botts account has been impounded. There are slight drafts and—"

"You mean he's broke," said Grandpa.

"Well, I can't honor any more—"

But Grandpa was wheeling away, and Mr. Gibbs' voice was cut off suddenly as Grandpa closed the door behind us with a resounding crash.

Mr. Botts looked up from a col-

umn of figures as Grandpa and I entered the timekeeper's shack.

"I know why you're back, Mike," he said quickly. "But you'll get your money."

Grandpa said quietly, "At it again huh, Bill?"

"I've made arrangements," said Mr. Botts. "You'll get yours."

Grandpa toed a chair around to his liking and slid into it. He pulled his hat down to rest on his thick black eyebrows and stretched out his long legs before him.

"So you've done it again," he repeated slowly. "You hocked yourself down to your last shirt, and you figured that I'd get the sticks out somehow. Then you double-crossed me with those perambulating buckets of bolts."

"You're neither crippled nor handcuffed," snapped Mr. Botts. "There's the door."

Grandpa slid deeper into the chair. "I think not, Mr. Botts. I'll stick around. But it'll cost you. I'll

take double pay if we make it, and if we don't, well—When's the first delivery date?"

Mr. Botts did not look up from the rough timekeeper's desk. "Thirty days," he said.

Grandpa said admiringly, "You've renewed my old faith in you, Bill. You did saw the limb off behind you, after all."

The limb was not only sawed off, it had been lopped so close to the trunk that it was practically healed and barked over.

The White River country was rough. Short steep pitches reared out of narrow canyons without rhyme or reason, with no slope long enough to make a log chute practical. However, Grandpa was a logger. So he spat on his broad scarred hands and waded into it.

His swampers and teamsters and snipers and road monkeys threw up a camp in five days, while the fallers cut their broad swath out toward the first ridge.

The cats arrived on schedule, along with the mountains of fuel drums and oil barrels and buckets of grease. Grandpa looked at the great stack of badly needed dollars and groaned. But he left Slader strictly alone.

The dapper man made a production out of supervising the tuning-up of his metal prima donnas, and Grandpa went grimly about swamping his skid roads and yarding out the first logs with the teams.

He howled like a trapped wolf when Slader, backed by Mr. Botts, demanded, and got, half of his swampers. "You said that those contraptions would get through the brush with the speed of a frightened tomcat," said Grandpa, "Now you're pulling half my crew to make roads for you."

"I'm putting them where they'll do most good," said Mr. Botts shortly.

Grandpa scowled and strode off, muttering something about knucklehead and buckets of bolts. But even he had to concede that the big cats could pull.

When they were working they bellowed and roared and stuttered and sank, and sent the iron-nerved logging horses shying into the brush in wall-eyed horror every time they passed. When they worked they pulled three logs to a team's one. But they seemed to show more temperament than their brutal bulk would indicate. If it wasn't an oil line vibrated loose to spew smoking oil all over the driver, it was a sapling rammed like a lance through the delicate copper tubes of a radiator. Slader was having his trouble with crew, too. He fired his first mechanic within a week, and the second one quit on his fifth day. He had a rapid turnover in drivers, also. He called them tractor operators, but the loggers dubbed them cat-skinners.

It was the morning shortly after Slader's newly hired mechanic had welded an iron framework of rods to protect the delicate cat radiators that Grandpa and I happened to drop into the cat shop.

Fred Williams, the new mechanic, was in a perfect dither. A six-foot sapling stub had jilpoked itself through the iron framework and literally ruined the copper tubes of one of the big radiators.

Fred was hunched over the radiator. He pried gingerly with a thin chisel, groped behind him for a pair of expandable pliers, and with a slow twisting pull, extracted a broken chunk of wood from its socket in the radiator core — a chunk of wood about three inches thick and ten inches long. He said resignedly, "There'll be no splicing these tubes. All I can do is solder 'em, which'll probably make the motor run hot."

Grandpa looked at me and winked. This mechanic, I knew, might be a scissor-bill grease monkey, but he spoke the timber beast vernacular.

Grandpa stepped over and watched the mechanic with interest. "It's delicate enough for all its size," he said.

The mechanic growled, "These knuckleheads they've got herding 'em ram 'em around like they were armor-plated."

Grandpa said idly, "Why not fix them up with it? There's half a dozen sheets of boiler plate over in the blacksmith shop. We could be saving some fallers' pay, too. Let them batter the sticks down with the cats."

Slader's voice came from the doorway of the shop, and it was a bit higher than normal. "Sweeney, can't you mind your own business?"

Grandpa turned and saw Slader and Mr. Botts standing in the doorway.

"My business is running this camp," said Grandpa evenly.

Slader's voice slid up another notch, "You've undermined me since the first day I came here, Sweeney," he shouted. "It's tickled you pink every time something went wrong, and you've pushed trouble my way every chance you got."

"Now, now, boys," said Mr. Botts. "All this talk isn't getting the logs out. Besides, I'm mighty tired of having to listen to you argue all the time. Now I want you both to get back to work and—"

Just then the mechanic's surprised voice made a hissing sound as he interrupted. "Boiler plate," he said. "It'd work."

"What's that?" asked Mr. Botts.

"Boiler plate," said Williams. "It'd work. Like Mike says. Cut a sheet to cover the radiator."

"You're out of your mind," said Slader. "Cover the radiator and you get no air through it."

"Yes, you do," said Williams. "We'll cut holes in it. Little holes, lots of 'em, until the thing looks like a sieve. But little holes, so nothing thicker than a pencil will go through 'em. Space her six inches ahead of

(*Turn to page* 46)

. . Trees Must Eat

IF there is any one thing concerning trees about which authorities are agreed it is that in order to live and grow, they must have in available form ten essential elements —carbon, oxygen, hydrogen, nitrogen, phosphorus, sulfur, potassium, calcium, magnesium and iron. Nature supplies these elements in sufficient degree to support tree growth if she is left alone, but when normal forces are upset by artificial development, it may become necessary to supply any deficiencies by artificial fertilization.

Those soil elements which are most readily exhausted and hence most commonly deficient in worn out soils are nitrogen, phosphorus and potassium. At the same time these are highly necessary to growth; so they have been named the critical elements. Without them plant life cannot exist.

Properly balanced organic matter is seldom economically available in sufficient quantities, and the use of manures and composts is often undesirable for esthetic reasons.

The deficient minerals, therefore, are most economically supplied by the application of commercial fertilizers. These may contain a portion of organic ingredients but the largest part of the constituent materials usually consists of inorganic carriers of nitrogen, phosphoric acid and potash—the percentage of these materials being indicated by formulae such as 6-3-4, 10-3-3, 10-6-4, etc., the numbers indicating the available percentage in the order named.

Artificial fertilization for shade trees is often desirable in areas where the natural forest floor has been replaced by lawns or paving; where grades around trees have been changed and the roots smothered, exposed, or cut; where trees have been weakened by serious disease or insect attack or drought; where the soil has been compacted; or in general where the normal forest relationships have been appreciably modified. Pale leaves, thin foliage and short twigs often indicate the need for fertilization.

Although arborists are agreed on the necessity for fertilizing trees growing under artificial conditions, there exists a wide variety of expert opinion as to details of formulae, quantities and methods of application. This is not strange, for the widely varying conditions under which trees grow are bound to be reflected in their nutrient requirements.

Idealistically, the soil in which any tree or plant is growing should be carefully tested before a fertilizer to supply its particular deficiencies can be compounded. But practically, this is impossible, and we have to depend for the most part on a fertilizer which is broadly applicable. The tendency is toward fertilizers relatively high in nitrogen content and somewhat less in phosphoric acid and potash.

Many investigators have found 6-8-6 and 10-6-4 formulae quite generally satisfactory for shade tree fertilizers although other formulae, too numerous to mention, have given favorable response. There is a great deal of ballyhoo in connection with special tree foods, however, and the tree owner should be sure that he is getting a dollar's worth of fertilizer units per dollar expended.

Specifications upon which the federal government buys mixed fertilizers call for the following: "Fertilizers: Mixed or prepared; for direct application to the soil; shall be uniform in composition and possess a

(*Turn to page* 38)

After small amounts of fertilizer have been placed in holes drilled in root area holes should be back-filled with soil or compost

Bartlett Tree Expert Company photo

Upper right, female flowers (conelets) enclosed in pollen-proof bags are pollinated with hypodermic needle at Eddy Tree Breeding Station. Both Jeffrey pines in bottom photo are 11 years old. One on left was crossed with Coulter pine

Blood

James G. Eddy, scion of a family prominent in American logging since Colonial days, is proving through genetics that a tree, too, is only as good as its parent stock

THE Select Committee on Forestry of the United States Senate was finishing its hearings in a smoke-filled room in Seattle in the fall of 1923. For two days the Committee had listened to a succession of lumbermen who talked chiefly about preventing forest fires and holding down forest taxes. Over and over again, "fire" and "taxes" had been held up as the main problems of Northwest forestry.

Chairman Charles L. McNary of Oregon announced, with an audible sigh of relief: "We have one more witness, James G. Eddy of Port Blakely."

A thick-set man, with sharp, penetrating eyes and hair brushed back at a belligerent angle, took the floor. Mr. Eddy told the Senators that before they undertook a tremendous program of reforestation in the United States, they should look to the seed and tree species that would re-establish our forests.

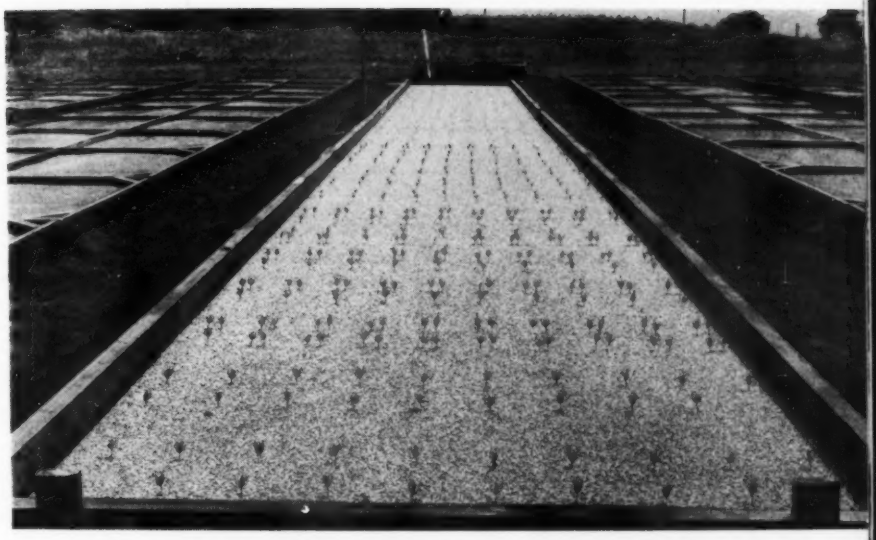
The witness told the Committee that with the tremendous need for wood, the nation could not afford to reforest with slow-growing trees, or with those of inferior quality. Agriculture, he said, had produced miracles in fast-growing and valuable plants, through the skill of plant genetics; and the same could be done in forestry.

Mr. Eddy urged the Senators to get to the root of the forestry problem, which was to make available the forest trees that would best meet the needs of fast growth and commercial qualities.

It was the most unusual and surprising statement of the entire two days; and it made a great impression. Those of us who knew Jim Eddy's determination were not surprised when, only two years later, he dug into his own pockets and established

Will Tell

By W. B. GREELEY



Tests at the Placerville, California tree breeding station about three weeks after sowing. Germination is almost complete

the Eddy Tree Breeding Station, near Placerville, California.

James G. Eddy comes from one of the oldest timber families of the United States. His family had seen the logging front move across the continent from Maine to Puget Sound. The Plantation of Eddington, on the Penobscot River in Maine, was granted to his ancestor, Jonathan Eddy, in 1785. The Eddys operated sawmills there for many years. Mr. Eddy's father moved to Bay City, Michigan, in the early

James G. Eddy, genetics pioneer who founded Eddy Tree Breeding Station

1860s and established a large lumber business.

Young Jim grew up in the woods and mills of Michigan, graduated from Princeton, and came to Puget Sound. With his brother, John W. Eddy, and other associates, he acquired an interest in the Port Blakely Mill on Bainbridge Island in 1903 and became an operating lumberman. For 30 years, Mr. Eddy was in the thick of the "high-ball" logging and expanding lumber production of the Pacific Northwest. He saw Washington move up to the Number one State in lumber production and hold that distinction for many years.

From his own experience and his intimate acquaintance with the active lives of his father and grandfather, Mr. Eddy formed a very real and vivid conception of the migration of sawmills from New England to the Lake States and from the Lake States to the Pacific Northwest, within the span of three generations.

His own familiarity with vast stretches of logged-over woodlands, from coast to coast, impressed him with the tremendous task of forest reconstruction that faced the country. He constantly asked the question: How can these vast forests be restored *in time?* He was convinced that new and faster ways must be found.

Timber cruising and constant observation of differences in the rate of growth and other characteristics of forest trees started Mr. Eddy on a serious study of plant and forest genetics. He read everything written by Luther Burbank on plant-breeding experiments in California; and met Dr. Burbank in 1918. The interview started a continuing discussion between the two men over the possibilities of carrying the principles

(*Turn to page* 28)

Bags prevent wind-blown pollen from reaching conelets of ponderosa pine

Service clubs and conservationists are taking separate paths toward a common goal. A joint approach would shorten the journey

TIME to Get Together

SLOWLY and almost unnoticed, a great development is taking place in the field of conservation: America's so-called luncheon clubs are joining the battle to protect our wildlife, soil and forests. Kiwanians, Lions and Rotarians are planting fish fingerlings, fighting to protect rivers from pollution and helping rural youngsters raise game birds.

Service club members are also planting trees on eroded hillsides and using their influence to secure better conservation legislation. Thousands of children are learning to love the out-of-doors as a result of attending summer camps sponsored by the major service clubs. And service clubs have, in a limited way, begun stirring up public interest in conservation.

The service clubs' interest in conservation has not developed to anywhere near its full potential, however. Only a few of the 14,370-odd Kiwanis, Lions and Rotary clubs in America have done this kind of work. But the number is increasing steadily as business and professional men come to realize that their well-being is inexorably linked to the preservation of our natural resources.

It may seem strange to think of

Many service clubs have sponsored own programs to feed starving wild birds

Many barren hillsides have been reforested by service clubs who have awakened to the need for halting soil erosion. They also have sponsored similar projects by youth clubs

By ELLIS JOHNSON

service club men doing conservation work, but there is plenty of evidence to indicate that Kiwanians, Lions and Rotarians are rolling up their sleeves.

Rotarians at Chagrin Valley, Ohio spent one full year investigating erosion, stream pollution and destruction of forests. Rotarian Dr. Clyde Leeper tramped across 170,000 acres making first-hand observations. He and his fellow service club members discovered widespread erosion, alarming pollution and the wasting away of much woodland.

To put a stop to these conditions, the Rotary Club organized the Chagrin Valley Association which had as its objectives: 1) to protect wildlife by preventing pollution; 2) to protect woodlands by promoting reforestation; 3) to protect the valley by controlling erosion.

Residents from eleven communities joined the Rotary-sponsored action group. Time will tell whether or not the organization was effective, but the fact remains that a service club recognized a conservation problem and acted to solve that problem.

In 1928 the Michigan Kiwanis Clubs lent their financial and strong-armed assistance to planting 10,000 acres to red pine on the Huron National Forest. The cooperative effort resulted in the planting of ten million seedlings. Further, it spurred other groups to add their bit.

Another good example comes from Sabetha, Kansas where Kiwanis Club members conducted "Operation Birdseed." Blizzards had covered the ground with deep snow, and many birds were on the verge of starvation when the Kiwanians acted. The men collected 690 pounds of cracked corn, sacked it in four-pound bags, and loaded it into a small airplane. The plane skimmed low over miles of snowbound fence rows, scattering grain that saved the lives of countless birds.

Lions Club members at Lakeview, Oregon helped the state conservation department plant fish, and Lions at Bountiful, Utah cared for sick waterfowl.

In Dayton, Ohio Rotarians have organized a tree-planting program to interest Boy Scouts in conservation. The service clubbers persuaded Milton Caniff, creator of the cartoon strip "Terry and the Pirates," to design an attractive shoulder patch that is given to each boy who participates.

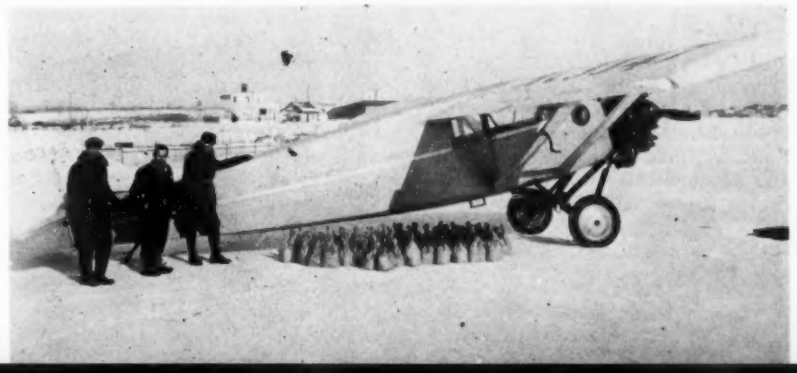
The service club instructs Scouts about tree planting methods, and then asks each boy to promise that he will plant a specified number of trees and protect them for one year. More than 300 Scouts have taken part in the program so far.

Kiwanians in Baltimore, Maryland organized widespread support for a law extending protection over tidewater marine life. And at Browns Valley, Minnesota Kiwanians helped local sportsmen and conservationists pump fresh water into a shallow lake so that fish there would not suffocate.

Lions in Grantsville, Utah helped state conservation officials police a wildlife sanctuary. The service club

(*Turn to page* 42)

Joint efforts of service clubs and conservationists can do much to expedite winter feeding of wildlife



Restless Neches River flows south along the eastern edges of present-day Thicket to the Gulf of Mexico

TEXAS

BIG THICKET

Even Texans are awed by this 430,000-acre labyrinth of forest and swamp where mystery lurks in the dark recesses

By ROGER SHELDON

TEXANS who are eager to describe the bigger-than-big wonders of their state, dote proudly—and even with a little awe—on their forest primeval, the Big Thicket.

"Man, there's bear, panther, wildcat, alligators, and goodness knows what else in these woods!" they'll exclaim.

"Many a poor soul lost in the Thicket. Why there's places in there no man's ever been . . . or, if they've been there, they ain't never come out."

Even the lumbermen, who can look at a forest with the eyes of milkmen counting bottles, have a deep respect for this east Texas labyrinth. They have set up lumber towns here and there—places like Pineland, Brookeland, Weisser Bluff, and Bessmay—began cutting out the choice timber, and then moved on to better stands, cursing the tangled growth. In a few years pine seedlings recover the bared hammocks. In the lowlands, the willows, palmettos, or the water hyacinths, cover footsteps and winch marks ofman.

The bounds of this huge forestry and recreation area are almost as loosely defined today as they were more than two centuries ago when the first Spanish padres ventured along its northern edges to establish missions near present-day Nacogdoches. These early Catholic missionaries recorded that between the missions and the Gulf of Mexico, a distance of more than 100 miles, there existed a forest so thick that it was impossible to traverse it even afoot, and that the Indians traveling southward went by canoe because there were no trails overland.

Immigrants to early Texas avoided the tangled Thicket, too. They either followed devious trails and waterways along the coast or struggled down the Old San Antonio Road through Nacogdoches. Skirting south, some followed the Old Spanish Trail, which is present-day U.S. Highway 90.

One early writer described the Big Thicket as all of Texas east of the Brazos River. Actually, the muddy Brazos is far to the west of the true Thicket. East of the Brazos, woods grow ever denser as you approach the Louisiana border. The "piney woods" in east Texas begin a few miles in from the Gulf Coast and extend almost to the Oklahoma border. Because of the broadness of the "piney woods," many Texans will casually tell you that the Big Thicket takes in about a dozen counties.

The original Thicket was just about that big, too. It once covered 3,350,000 Texas acres.

What foresters call the Big Thicket today, however, is a dense growth of about 430,000 acres taking in all or part of seven counties.

This area is a crazy quilt of swamps, hammocks, sand and clay hills, and bottomlands. In the river bottoms the hardwoods thrive—red and black gum, oaks, cypress, ash, and elm. In the hills longleaf pines send their tap roots deep into the red soil. Palmetto, waterlily, wild grape, wandering jew, hyacinths, and rare orchids are found in the swamps.

The soil is often sandy. Water can usually be found less than 20 feet below the surface.

During recent years, fall droughts have kept the Texas Forest Service busy fighting fires in the inhabited sections of the "piney woods." Once in a long while, a gulf storm will topple a few of the stately old moss-festooned oaks and towering cottonwoods. Usually, though, the years go by without mishap, sometimes without even a winter frost.

Geologists tell us that the area was once an arm of the Gulf of Mexico — a lake left by the rising continent. The coming and going of Gulf waters laid down a rich sediment that encouraged the growth of dense vegetation over a broad area. Later, the Angelina, the Neches, and other rivers came to flood the lowlands each spring. Deep in the fastnesses of the Thicket widening bayous formed small muskegs.

The geomorphic limits of the Big Thicket included the greater part of 12 or more Southeast Texas counties, but the vegetation today remains sufficiently as it was in its primitive state to justify the application of the name only to an area centering in north central and northern Hardin county and southern Polk and Tyler counties, with prongs extending into San Jacinto, Liberty, Montgomery and Jasper counties.

Into this Eden of rare ferns and shy woodland creatures man has come at infrequent intervals seeking haven and sustenance. During the Civil War the Thicket was a refuge for Confederate deserters, gangs of bushwhackers, and runaway slaves. Conscript details of the Confederate army hunted the fugitives. Down through the years have come tales of lost travelers, of sudden disappearances, of murder, and other crimes committed in the Thicket.

The region is steeped in folklore. Deep in the "piney woods" many of the predominantly Anglo-Saxon people still believe in the efficacy of conjure balls to dry up wells and of coal oil to heal all cuts and cure all illnesses. Cotton is planted when the whippoorwill cries. Horse shoes are nailed over cabin doors.

"Hants" abound. The ghost of one woman haunts a tree and protests to passersby about having to be buried beside her husband's relatives. "Old Coffinhead," a giant rattlesnake, roams the Thicket. Negro superstition says that the snake is eight feet long and so old it has whiskers.

With tongues in cheeks, the folks around Saratoga will tell you that the Thicket is so swampy nearby that the cattle get about by fastening their horns in muscadine vines and swinging from one cypress tree to another.

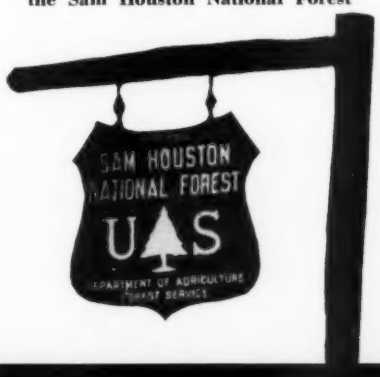
Folks who live "back yonder quite a piece" call their hounds, "pot lickers"; their funerals, "buryings"; their quarrels, "fuss fights." "Graveyard workings," or cemetery cleanups, are often held in small communities. They are all-day affairs at which lunch is spread outdoors. Local politicians often bid for votes at these events by pulling weeds.

Dog-run houses may still be seen in some sections of the Thicket. These houses are of a design perfected by early settlers for convenient frontier living. They consist of two rooms with an open space between, all of which is covered by a continuous, gabled roof. The dog-run, or breezeway, the open hall between the rooms, was a sitting room or porch in the summer where the washing could be hung on rainy days. Chairs made by hand from well-seasoned magnolia and covered with undressed rawhides, hair side out, lined the trot.

The dogs slept in this breezeway,

Texas' thriving oil industry is beginning to make inroads into Big Thicket. These derricks are located east of Saratoga

Entrance to Big Thicket district of the Sam Houston National Forest



rain or shine, and so did any overflow of guests. The original dog-run houses were log cabins. Most of these houses still existing today are of weather board or rough lumber.

Lumbering has been the mainstay of Big Thicket Texans. Earliest lumbering operations were in the southern part of the region near the waterways and the railroads. The early day sawmills were small shacks tooled with pit saws or whip saws operated by men and mules, cutting not much more than one log a day. Later, rotary saws called for water power or teams of oxen.

The first mill recorded in Texas history was under construction at Adams Bayou, above Orange, Texas, about the year 1836. Its construction was interrupted when reports that the Mexican army of Santa Anna was approaching caused all workers to drop their tools, shoulder rifles, and head for the San Jacinto River, where Sam Houston's irregulars decisively won the war for Texas independence.

Construction at the mill was resumed after the war. A dam was built, and by winter a sash saw had cut several thousand feet of lumber. The mill's capacity was 1500 feet of lumber per day, but the demand for pre-fabricated wood was small in those days. In 1847 the mill was abandoned.

The first steam sawmill to work the Thicket region was erected at Turner's Ferry in 1841. It, too, operated until 1847, when a spring flood washed away more than 100,000 feet of cypress lumber. Fearing further disaster, the owners moved down to Orange, on the Sabine River.

Most of the mills in the early days were shingle mills. Shingles were made by sawing logs into shingle lengths, splitting these cuts to proper thicknesses, and thinning the edges with draw knives. Rafts of bundled shingles were floated down river to steamboats, which moved them on to Galveston or other coastal ports.

Settlement and rebuilding after the Civil War created a great demand for lumber. Large sawmills were built at Beaumont, south of the Big Thicket. The railroads began to haul finished lumber. Later, when Southern pine came into its own, they began freighting pulpwood too.

During the period of early settlement virgin pine land could be bought for 25, 50 and 75 cents an acre. People laughed at a man who purchased forest land more than a half-mile from a river. More than that distance from water was too far to haul timber and he would not be able to make taxes from his land, the purchaser was warned.

Even today, timber any distance from a railroad or a waterway offers a problem to the lumberman. In Hardin county, the Southern Pine Lumber Company found itself with a transportation problem of this nature, but it is now carrying on a successful operation on a 4300-acre tract which until recently was considered impossible to log. The ground was too soft to support railroad equipment. The tract was much too soggy and swampy for trucks; no streams ran through it and no roads ran into it.

Southern Pine's experts came up

"Razorback" hogs seem to thrive in the unfenced underbrush of the Big Thicket

with a solution: They built a railroad track and ran logging trucks on the rails. Truck tires were replaced by motor car wheels, and double transmissions enabled the vehicles to travel forward or backward at the same speed.

Log cars, converted truck trailers mounted on old-time log car wheels and equipped with couplers, are hitched to the trucks to form a train. Two cars normally carry about 3000 to 7000 feet of sawlogs per trip.

These unique "trains" run from the little town of Strain on the Missouri Pacific to a point a mile into the Thicket, where the railroad branches, one fork meandering through the swamps to a logging camp three and one-half miles to the north and the other extending to Sams Prairie where most of the loading is done.

Nicknamed "The Strain and Keep Straining," the line ignores all obstacles. Much of the line stays under swamp water most of the year. Logging operations can be carried out for only about four months of each year.

Timber is a steady crop for Big Thicket land owners. Almost too much of a crop! For timber cutting has made serious inroads into many sections of the Thicket. By the end of World War II east Texas found itself sorely depleted of top grade seasoned lumber—a position shared by many other lumbering states.

But the reforestation work of the Texas Forest Service is helping to bring the Thicket back into its own. During the past planting season, alone, the Service distributed 17,600,000 seedlings to farmers and forest industries of east Texas. Approximately 7,760,000 of the seedlings were planted by farmers.

One other menace has to be dealt with—the southern pine beetle. The southern beetle chewed up enough pine in the Thicket region last year to build 1250 five-room houses, according to an estimate by D. A. Anderson of the Texas Forest Service.

But in spite of heavy lumbering and the pine beetle, the Big Thicket is striving valiantly to hold its line. It encroaches rapidly on cut-over land. At one place it is said to have extended 60 miles in the past 40 years.

Because of its virility, this Southwest Eden is a big attraction for hunters, fishermen, and nature lovers.

Members of the Houston Herpetological Society frequently make sorties into the labyrinth, peering into stumps and turning over rotten logs for specimens.

Other nature lovers brush past giant palmettos seeking rare mushrooms and lichens. They push along the banks of Pine Island Bayou, past desolate moss-draped cypress trees, seeking ferns and water plants. There are rare ferns, some more than four feet tall, and small varicolored orchids.

In the eastern part of the Thicket there is a Lost Creek, which drops suddenly into a hole at the foot of a large tree near the small settlements of Bragg and Honey Island, only to reappear just as suddenly from under a bank of ferns northeast of Saratoga, more than five miles to the south.

Alligators still roam the swamps. At night, the hoarse, resounding

(*Turn to page* 46)

A Washington firm is saving 25 million board feet of timber through sanitation logging—cleaning out insect-stricken trees and those vulnerable to attack

Cheating the Beetles

By HAROLD OLSON

AN estimated 25 million board feet of high quality timber that was doomed to die and decay in the woods is being saved through a sanitation-salvage harvest started in 1951 on the western pine tree farm of Longview Fibre Company in Klickitat County, Washington, near Goldendale.

Representative of the growing effort among western pine tree farmers to combat bark beetles and reduce timber losses by cleaning out weak oldsters in the stands, the Klickitat operation already has salvaged close to ten million board feet and is slated to continue at about five million feet per year for another three years.

"Cheating the beetles" might be the title of the swift, light onceover that this old forest is getting. Beetle-stricken trees scattered over thousands of acres are being taken out by as mobile and competent a logging crew as ever functioned in the west. Averaging perhaps one tree per acre, the loggers with no time to sit down, range over vast areas to make up for lack of concentrated volume. Strong market conditions, timber quality, fast equipment and logging know-how made the sparse harvest economically possible.

It is a "bug tree timber sale," pure and simple. Though it owns every stick, Longview Fibre Company, operating a great pulp and paper mill 150 miles down the Columbia River at Longview, isn't getting any of this timber. All is going to the nearby Goldendale sawmill of Klickitat Pine Box Company, affiliated with Cascade Lumber Company of Yakima, Washington, a firm that helped pioneer sanitation-salvage harvests many years ago.

At the Goldendale plant, the salvaged sawtimber from the Longview Fibre tract provides one-third of the mill's annual requirements of raw material. By the same token, since every log stood otherwise to be lost, the harvest sweetens the old-growth timber pot and makes a real contribution to continuous maintenance of the local forest industry payroll.

American Forest Products Industry photo

In cloud of dust a tractor delivers "turn" of logs to landing in the Longview Fibre Company's big "sanitation-salvage" harvest

Longview Fibre's 52,000-acre pine tract is largely virgin forest, susceptible at times to beetle attack because many of its trees are old, mature, less vigorous. In that type of woods bark beetles can flare up and do great damage when conditions are right. They seem to gang up on older trees that can't resist them too well. Drilling galleries under the bark in the tree's lifeline they readily kill great pines by girdling, and in doing so they feed well and build up their broods which later emerge to attack other trees.

Stronger pines resist by "pitching" out the bugs. A forest of vigorous trees is relatively safe under normal conditions.

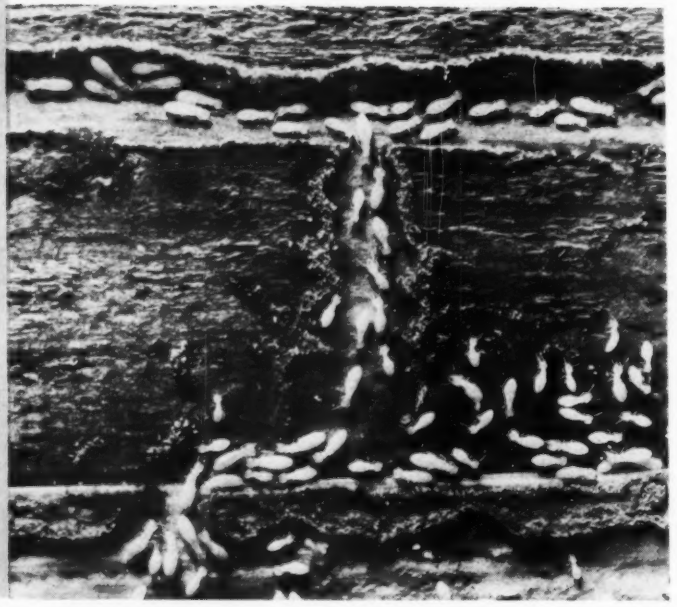
Two years or more ago there was evidence the beetle infestation was on the upswing. Longview Fibre's timber division manager, A. H. Brandia, sent a team into the forest to make a careful investigation and develop a sound technique for marking the beetle-susceptible trees.

On the basis of findings, a sanitation-salvage harvest was decided upon. A contract was let to Klickitat to harvest certain trees, selected and marked for cutting in an effort to cheat the beetles. Markers used what is called the "California risk rating" formula—giving every big tree a physical examination to de-

(*Turn to page* 40)

Termites, an Unnecessary Evil

By HENRY B. STEER



An army of termites on the march from their headquarters in the ground

The termite is a nasty pest,
It eats wood with unholy zest,
It chews its way through sap and heart,
Until the building falls apart.

That is unless you chance to see
Where termie's covered runways be.
If routed with a toxic spray—
He'll go away, and stay away.

The Author

Termite-killing spray can best be applied with ordinary compressed air spray

ON a balmy Saturday this last spring, a friend of mine was eating lunch with his family in their well-built home in the Chevy Chase area of Washington, D. C., when without warning thousands of winged "ants" emerged from under the dining room rug and flew all over the house. The "ants" were termites in the winged state swarming, and their appearance was positive indication that a termite colony was near and damaging the wood in the floor and underneath.

Termites are wood-eating insects resembling ants that are found in nearly every state and that do millions of dollars worth of damage annually to wood in buildings. Native termites can be grouped into two classes: 1) the ground—inhabiting or subterranean termites; and 2) the dry—wood termites.

Subterranean termites are by far the most common. They are found in nearly every state and are responsible for most of the damage to structures of wood. Dry-wood termites are found only in a narrow strip extending from Southern California around the southern edge of the United States to Virginia. Subterranean termites make their headquarters and develop their colonies in the ground. Unless they are able to make constant contact with moisture they will die.

They are not present in the lumber at the time the building is being constructed, but infest the lumber by entering from their headquarters in the ground after the building has been erected. If allowed to continue their operations unmolested they may damage a wooden structure to such an extent as to cause it to collapse.

Dry-wood termites are fewer in number, multiply less rapidly, and cause less destruction because of their more limited distribution. Because of their ability to live and work without outside moisture or contact, they are a definite menace in areas where they exist.

Both kinds of termites are unnecessary evils because they can be kept out of buildings by the proper use of toxic chemicals and good construction methods.

It is not the purpose of this article to discuss the proper methods of construction and sanitation to be used in erecting new buildings to provide adequate protection against termites. Complete information on this is readily obtainable from many sources including state and federal forestry departments, agricultural colleges, and the manufacturers of wood preservatives.

We are primarily concerned at this time with the millions of owners or inhabitants of buildings con-

(*Turn to page* 44)

"Never had to back out yet"

—says TD-24 operator Clarence Watters making skid roads through mountain timber near Glacier Park for J. Neils Lumber Co.

International TD-24s push up mountain sides as steep as 55 per cent around Libby, Montana, where the J. Neils Lumber Co. is logging 100-foot virgin larch for power line poles and lumber.

Foreman Carl Rawlings says the TD-24 will go anywhere, and Operator Clarence Watters tells why:

"The TD-24 is the best crawler I ever drove. Whatever we run up against, it has the power and weight to handle. I can take it anywhere the boss can blaze. We've never had to back out yet."

Bob Neils, in charge of Libby operations, puts it this way:

"With TD-24s we've definitely been getting more work per day. They are much steadier and have more endurance than the equipment they replaced. We are working about 35 crawler tractors. Our present policy is to replace them as they wear out with International TD-24s."

And that's the word from men who know. Call in your International Industrial Distributor for the full story. Check his complete service facilities and parts stock. You'll be a TD-24 man from then on in!

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

"Power to handle rock and trees and steep grades," is what operator Clarence Watters says about the TD-24. In this photo Watters shows what he means as he pioneers a skid road through 100-foot pole timber.

SEE YOU AT THE POLLS!

INTERNATIONAL HARVESTER

INTERNATIONAL

POWER THAT PAYS

Blood Will Tell

(*From page* 19)

of genetics developed in flowers and garden plants into the field of forestry.

Dr. Burbank readily agreed that it could be done with many varieties of trees. He showed Mr. Eddy his "paradox walnut," at Santa Rosa, a hybrid which at 16 years of age had a diameter of 24 inches at a height of four feet above the ground. Burbank, however, was doubtful how much headway could be made in genetics with the conifers, because of the long time required to produce and mature seed and the many unknown factors in experimental techniques. It might be done; but the road was long and uncertain. This was just a challenge to Jim Eddy.

The explorations with Dr. Burbank were extended through consultations with many other men. Mr. Eddy found strong support for his determination to develop faster-growing and better trees from Dean Walter Mulford, of the California School of Forestry; from Earle Clapp and Edward Kotok in the U. S. Forest Service; and from Dr. E. B. Babcock, Professor of Genetics at the University of California.

Many other scientists aided Mr. Eddy with Technical suggestions and stimulated not only his explorations but his deeply rooted faith in the natural laws of genes. Dr. Burbank was finally convinced that experimental research in selecting strains and hybridizing coniferous trees would be very advantageous; and gave his full backing to the project which was maturing in Mr. Eddy's mind. In 1925, the Eddy Tree Breeding Station was established at Placerville, California.

The Station was maintained for 11 years from the personal funds of James G. Eddy, with some assistance from the Carnegie Institute. Because of their great commercial importance and their enormous range in characteristics and adaptability, improvement of the pines was chosen as the major objective. And since the logical first step in such a program is to assemble the materials, the first major activity of the staff was to establish at Placerville an arboretum containing most of the 90-odd species and varieties of pines.

This invaluable breeding laboratory, later named the "Eddy Arboretum," is the most complete collection of pines in existence.

I had the good fortune to visit the Institute at Placerville in the early 30s. The inspection of a dozen or more plots of young ponderosa pines, grown from seed collected in different parts of its range from the Black Hills of South Dakota to the edge of Arizona deserts, was fascinating. The differences in the growth rates and superficial characteristics of these little pines, all ponderosa, were as great as the differences often seen between distinct species.

I was also fascinated by the method used in control pollination; female flowers (conelets) were carefully enclosed in pollen-proof bags; which were equipped with windows, so that no wandering "lotharios" of vagrant pollen in the air could interfere with the hybridization experiments. Then, when the conelets were most receptive, they were pollinated —without removing the bags—with the yellow pollen of knobcone pine or slashpine or whatever species had been selected, by inserting a hypodermic needle into the bag and blowing the golden dust onto the flowers.

It was a day memorable for many arguments. Having been in the woods for 30-odd years and strong in opinion, I frequently challenged assertions of the keen young geneticists who piloted me around. Wasn't *environment*, after all, much more important than heredity in determining the growth and characters of trees? The bluest-blooded pine in the world could not get very far on top of a dry, volcanic butte.

We chanced upon the subject of forked trees, called "schoolmarms." "There," I declared, "is a clear case of environment. A lightning bolt or insect or blow from another tree has knocked off the leader; and the struggle for light between branches on opposite sides of the crown has produced the fork of the schoolmarm." "Will you step this way, please," was the answer of my guide.

I soon was looking at a couple of dozen little pines, six or seven feet high, all from seed borne by a conspicuous and typical ponderosa schoolmarm. And every one of those little trees had an identical form, three and a half or four feet up on the stem. The champion of environment was surprisingly silent for the rest of that day.

After building up a background of experience in the selection of promising parent trees, the Institute undertook the second phase of its research, hybridization between various species of pine. Some 230 interpollinations have been attempted, 46 of which have thus far yielded living hybrids which offer possibilities of establishing new forest tree species. One of them is a cross between the Monterey pine of the California coast and the knobcone pine of the Southern California mountains.

The hybrid seems to combine the rapid growth of Monterey with the frost-resistance and all-round hardiness of knobcone. It has been tested over a period sufficiently long (23 years) to show that its impressive early performances were not the reof a favorable environment.

It has recently been possible to plant 15,000 hybrid pines produced at the Institute, for field tests under varying site conditions. In these plantings the hybrids are interspersed with pines of the parent species so as to get a direct comparison, side by side, of growth and characteristics under forest conditions. No appreciable work has been done on Douglasfir other than assembling data on the origins of that species and publishing a technique for controlling pollination in Douglasfir.

The Institute at Placerville is still in its infancy; but its ultimate promise to American forestry is beyond calculation.

In 1935, the Institute of Forest Genetics was donated to the people of the United States, and has since been operated by the California Forest and Range Experiment Station.

This accomplished another of Mr. Eddy's purposes. He had long felt that federal ownership and responsibility were required for the far-sighted planning and stability necessary in carrying his undertaking through the long years ahead of it. However, he continues to support the Institute financially. He is laying plans for a research foundation that will collaborate with, and supplement the facilities of, the Forest Service and other organizations engaged in breeding forest trees.

James Eddy is another of the individualistic breed of lumbermen who refused to go along with the current thinking of his own crowd and times, who set a definite goal and held to it for years in the face of ridicule and all manner of practical difficulty. All American forestry is indebted to his foresight.

Nebraska's Man-Made Oasis

(*From page* 13)

Research by Dr. Carl Hartley and associates produced successful methods of controlling insects and the damping-off fungi which attack seedling trees shortly after germination and often cause heavy losses.

Other contributions have been made as a result of the project in the control of root, needle and stem diseases and in the use of soil fumigants. Recreation and education are to be found at the forest. Foresters, agronomists, ornithologists, biologists and ecologists can study the effects of the establishment of a forest in a virtually treeless region, and observe the several changes in vegetation, bird and animal life.

A recreational center is located in a beautiful grove of green ash at the entrance to Bessey nursery, providing swimming pool, bathhouses, a wading pool, swings, tennis courts and picnic tables.

The area promises to be popular during the forest's Golden Anniversary celebration, when basket lunches will be the order of the day.

One of the primary functions of the forest's tree nursery is the production of seedling trees under the Clarke-McNary Act by extension foresters of Nebraska, North and South Dakota, Kansas and other states, on a cost-of-production basis. The nursery at present occupies 30 acres and generally produces two- and three-year-old ponderosa pine, eastern and Rocky Mountain cedar and Austrian pine, besides other species requested by cooperating states.

The seedlings have been furnished to the shelterbelt program, the Soil Conservation Service, and more than one million trees are sent annually to the Harney and Black Hills National Forests of South Dakota. The present capacity of Bessey nursery is five million seedling trees per year, with 200 million seedlings having been grown since 1903.

Improved living conditions on farms and ranches throughout the Great Plains has been the contribution of the forest and tree nursery. A few of the uses Bessey nursery's trees have been put to include the beautification and protection of farm homes, shelterbelt protection against drying winds and drifting snow, livestock shelter, erosion control, food and cover for wildlife, and timber products such as lumber, posts and telephone poles.

In 1952, Nebraska ranchers and farmers alone received 1,034,000 evergreens and 550,000 broadleaf trees through Clarke-McNary tree distribution. A large number of these trees was planted for livestock protection.

The biggest single order for trees in 1952 came from the Anderson Cattle Company ranch at Hyannis, which set out 72,000 pines and cedar by machine, and plans to order more trees for delivery next spring. Another of the outstanding Clarke-McNary plantings is on the Swan Lake ranch of the late E. G. Billstein, where 143,000 pines were set out in three years—and all by hand.

The Golden Anniversary celebration of the forest, to be held at Halsey, Nebraska, this fall is planned to note and observe the tree plantations, to give guidance to a program for the second 50 years of growth of the man-made forest, to recognize the extension aforestation program under the Clarke-McNary Act in the prairie states, and to recognize scientific work which has been done in the interest of the lifestock industry and proper management of sand-hill-type vegetation.

Visitors from all parts of the United States will tour the forest and nursery during the "open house" period from September 10 through 13. The tenth has been set aside as farmers, ranchers and sportsmen's club day; the 11th, veteran's day. The 12th will be especially for the federation of women's clubs and the federation of garden clubs, and the 13th for Boy and Girl Scouts, 4-H and FFA clubs and other young people's groups.

Chief Forester Richard E. McArdle of the U. S. Forest Service will be the featured speaker during the special anniversary program on September 14.

Other talks will include a welcome by Forester-in-charge Russell K. Smith; Dr. R. J. Pool, professor emeritus of the department of botany, University of Nebraska, on the history of the forest; Charles Scott, first supervisor of the forest, on early conditions and problems; Chet Marshall of the Nebraska Association of Nurserymen; Everett Barr, area vice-president of the Association of Soil Conservation District Supervisors; and Donald C. Clark, regional forester at Denver, who will introduce Chief Forester McArdle.

Carolina's Halo of Haze

(*From page* 11)

most picturesque mountain village within walking distance of clear mountain streams, rocky gorges, mountain lakes and limestone caverns.

Turning north on the Parkway travelers reach an underpass, Buck Creek Gap, which leads to Burnsville via U. S. Highway 19E. Burnsville School of Fine Arts together with the Parkway Playhouse attract visitors not only from the United States but from many foreign lands.

At Bakersville, a beautiful new highway leads to Roan Mountain (elevation 6284 feet), from which seven states can be seen.

The mountains of western North Carolina are a treasure house for visitors interested in native handicrafts. In shops and homes along busy highways, and in cabins nestling deep in mountain coves, nimble fingers of hundreds of craftsmen, plying arts they learned in childhood, make a variety of articles which find a ready market.

One of the most skilled of these artisans is Roby Buchanan, who in his one room grist mill on Cane Creek fashions beautiful jewelry from native gems found in the beds of streams and mine tailings.

Five miles from the Blue Ridge Parkway is Spruce Pine, the mineral city of North Carolina. It is the center for commercial development in feldspar, high grade kaolin and mica.

Overlooking Linville is Grandfather Mountain (elevation 6000 feet), which is reached by a toll road that leads to an observation platform on this picturesque old mountain. Once a year, in June, from all over the United States, crowds exceeding 30,000 gather to take part in the "Singing on the Mountain."

At Wiseman's View can be seen the "Grand Canyon of the East"—Linville Gorge. In autumn the brilliant coloring of the gorge is like a painter's palette. One needs but to turn his head from this magnificent view to behold the majesty of Table Rock Mountain, landmark seen from four states, the beacon for man in this area since earliest recorded history. Perched on top is the forestry lookout station for this end of Pisgah National Forest.

Nearby is Blowing Rock which affords an expansive view of the surrounding country.

Only a few miles from Asheville are Chimney Rock and Lake Lure where the Bottomless Pools still refuse to reveal their Ku-Klux story of Reconstruction days.

Westward on U. S. Highway 19, the expressway from Asheville to Soco Gap enters the 50,000 acre Qualla Reservation, home of 4000 Cherokees. Self-governed, this tribe operates motor courts, restaurants and many curio shops. From the end of June until Labor Day "Unto These Hills," the story of white man's inhumanity to red men, is dramatized.

The annual Cherokee Fair is held in October. Exhibits featuring handicrafts, agricultural products, and tribal dances and games are presented daily. Stickball, known as the roughest sport in existence, is a favorite of the Cherokees.

The most popular national park in America is the Great Smoky Mountains National Park. Bathed in purple, smoky haze, this greatest land mass in Eastern America, approximately 460,000 acres of wilderness, is the home of some 4000 species of plant life. There are more than 250 kinds of birds and animals and 600 miles of trout streams.

A gently graded road winds upward to the center of the park, Newfound Gap (elevation 5063 feet), where there is parking space for 1000 cars. From here can be seen mile high Mt. LeConte in the distance, and Gatlinburg nestling at the foot of the mountains on the Tennessee side.

Forney Ridge Highway takes off from this point for an eight-mile drive to Clingman's Dome (elevation 6310 feet), the highest motor road in the park.

Near Tapoco on U. S. Highway 129 is Fontana Village and the fourth highest dam in the world.

Along this same highway is the Joyce Kilmer Memorial Forest (named in commemoration of the author of "Trees"). It is a dense forest of 3800 acres of virgin timberland in the Nantahala National Forest.

And this is western North Carolina, where fewer than 35 years ago the traveler made his way by wagon over rocky precipitous trails and where at night he exchanged cold bricks for warm ones at roadside fires. Today, superbly constructed highways have made available to those who would have it this natural wonderland.

NLMA Then, Now, Tomorrow

(*From page* 9)

In the last 50 years, the sawmills of our country have transformed logs of the forest into 1,700,000 million board feet of lumber — enough to cover every square foot of Virginia, Maryland, New Jersey and Delaware with a wood floor one inch thick. This tremendous production of lumber was used for a new forest of homes, factories, stores, and a multitude of other human needs in order to expand frontiers and to build a nation. I like the way C. Arthur Bruce, of Memphis, Tennessee, one of NLMA's past presidents, expressed it at St. Louis when he said:

"In reviewing the history and progress of the lumber industry during the past half-century, certain features, to me, stand out in clear relief. First and foremost is the contribution of the lumber industry to the rapid development of the West. In the early 1900's much of the West was still pioneer country. Homesteading, land clearing, mining, road building were going on apace.

"Villages and towns were being established, and some were growing into cities. Thousands of immigrants were flocking to our shores, and many of them headed for 'open' land. Town and county governments were being founded. Schools and other community facilities were demanded by the new settlers.

"In all this, scarcely a structure was built that did not use lumber in whole or in part. And the lumberman was there with lumber when it was needed. Employment of labor by logging camps and sawmills was great. Oftentimes the first payrolls, the first communities and the first markets for farm products were brought by the lumberman."

In the fraternity of lumbermen attending our Anniversary meeting was Mark L. Fleishel, of Jacksonville, Florida, eminently qualified by many years of leadership to discuss the 50-year record of NLMA.

Mr. Fleishel said: "In the course of the development of the Association, innumerable projects and activities have been undertaken, the results of many of which are taken for granted today."

He cited the need for lumber standards as one of the basic reasons for the creation of NLMA in 1902, and its efforts over the years culminating in the adoption of standard grades and sizes of lumber. He spoke of the promotion of insurance on sawmill properties—in early days a major problem; and of the development of credit by the Association for the lumber industry. He mentioned the trade extension activities relating to building codes, a "Home Magazine" with a 500,000 circulation, and the two "bibles" of wood consumers on wood structural design and lumber grade-use.

Mr. Fleishel spoke with pride of how the Association in the 1930's organized a new corporation, American Forest Products Industries, Inc., commonly called AFPI, and how this corporation established, in turn, the Timber Engineering Company. He told of the development of AFPI programs of Tree Farms, Keep Green and Cash Crops which became so vast that in 1945 AFPI separated from NLMA so that it could devote full time to these programs.

Forestry, inescapable consideration of today's lumberman, and the progress that has occurred in that field was well summarized in a statement by President Veach: ". . . If our increase in tree growth continues for another ten or 15 years (and we have every reason to assume that it will) and if the per capita consumption of lumber continues to decline as it has in the past 50 years, we will again have trees 'running out of our ears' and it will again be unprofitable to grow trees. I am certainly not worried for the future as to the availability of raw material but I am worried about our markets."

The published proceedings of NLMA's early annual meetings are a valuable source of historical information. With regard to forestry, they reveal a surprising amount of interest despite major obstacles (severe forest fires, many of them settler-caused, high property taxation, and low timber values) characteristic of those early days.

In 1903, NLMA members passed a resolution which said in part: ". . . We pledge our earnest cooperation in every practical plan for the better handling of forest properties. . . ." In 1908, a "Committee for the Conservation of Forests" was approved. In 1910, the Yale Forest School was granted $100,000 by the Association to establish a chair of lumbering which still exists today.

Relations between lumbermen and government foresters were ex-

(*Turn to page* 36)

NLMA Then, Now, Tomorrow

(*From page* 34)

cellent and scarcely a meeting was held that a Forest Service officer was not a principal speaker—that is, until Gifford Pinchot and some others began to view the problems of forestry as unsolvable without federal regulation. The aftermath of this was an unmerciful chastisement of the lumber industry by magazines and newspapers around 1910.

So severe was the bedevilment that J. A. Freeman of NLMA's Forest Conservation Committee remarked, "I have enjoyed the privilege of being on this Conservation Committee a number of years and I have tried to arouse myself to all sorts of heights and pitches of enthusiasm; but when I see the whole trend of things, I lose heart in it. . . ." This bedevilment has continued with greater or less intensity ever since, and largely in the form of a foreign ideology—the threat of regulation of private forest lands by the national government.

There was no lack of enthusiasm among the speakers at the 1952 Golden Anniversary forestry session. Hillman Lueddemann, of Pope and Talbot, Inc., and president of the West Coast Lumbermen's Association, who presided, said he did not agree with the old Dutchman who said, "Ve got too soon 'olt', and too late 'schmart'," because lumbermen have become smart in respect to forestry long before growing too old.

Other speakers on forestry included N. F. McGowin, of the W. T. Smith Lumber Co., Chapman, Alabama, who said of forestry in the South, (quoting Colonel William B. Greeley, Chairman of the Board, American Forest Products Industries, Inc.), "I know of no parallel in world history of a forest recovery so rapid and carrying with it such industrial progress as that of the South during the last 30 years."

Following this, J. P. Weyerhaeuser, Jr., of the Weyerhaeuser Timber Co., Tacoma, Wash., described how "private forestry progress in the West followed the normal economic pattern of a rapidly developing country," until a "new dynamic era of timber growing was reached."

In his paper, Rand Stowell, President, Northeastern Lumber Manufacturers Association, said of the Northeast, "Predictions of a timber famine have not come to pass as promised."

On the subject, "Progress in Federal Forestry", Richard E. McArdle, Chief, U. S. Forest Service, said to the lumbermen, "Progress in federal forestry has been substantial. Credit for some of this progress belongs to you. Progress in private forestry—at least on the larger properties—also has been substantial. I think we deserve some share in the credit for this. We both have much to be proud of."

Fred Lang, President, Association of State Foresters, who spoke on the progress of state forestry, pointed out that in 1902 there were but 12 state forestry organizations in the picture, while today there are 45.

No lumberman's review of 50 years of forestry progress would be complete without a word from William B. Greeley. As it has been said, "In the eyes of youth is reflected the future," so in the ever-youthful eyes of Bill Greeley was reflected the future of forestry. He told us:

"There seems almost no limit to the skill of wood technologists and industrial engineers in devising new

processes and new products from wood. The more dollars they put back on the stump of the tree, the greater becomes the incentive for commercial forestry.

"The best assurance the United States has today that forestry has become a permanent part of its economy is that for every acre of forest land we have, in all ownerships and all conditions of growth, something over $15 has been invested in manufacturing enterprises for converting and processing wood. A capital outlay exceeding seven billion dollars is not going hungry for raw material. It has laid down a solid economic foundation for timber cropping."

Continuing he said:

"The union of advancing technologies in the mills and advancing timber culture on the woodlands is ushering in the most creative and dynamic forestry the world has ever seen."

I wish there was space to recite the details of the outstanding progress in other fields described at the NLMA Golden Anniversary meeting by lumber industry leaders.

Were I to do so, I would tell you what J. R. Bemis, E. C. Olson, W. R. Warner, and A. E. Swanke said about progress in logging; what E. Oswald Lightsey, J. F. Coleman, J. J. Linehan, W. T. Murray and Lee Robinson said about progress in lumber manufacturing and lumber standards; what Milton Craft, L. G. Carpenter, Ward Mayer, and C. D. Dosker said about progress in lumber products; what Walter S. Johnson, Carl Rasmussen, Luther O. Griffith, Omar Hilton and Walter Nettleton said about new products from wood; and what E. W. Conklin, B. C. Varner, Clyde Fulton and A. Trieschmann said about progress in lumber distribution.

Not overlooked either in the recital would be the entertaining and informative remarks of U. S. Senator John L. McClellan and of Ralph R. Macartney, Stanley F. Horn (our toastmaster), Winthrop M. Hallett, Jr., and Ben Springer. And, of course, nostalgia was provided by the reminiscences of past NLMA presidents and the old timers.

More important than anything else, the St. Louis meeting focused attention upon the pattern of a past so noteworthy and so unmistakably the product of an aggressive reach for a better tomorrow for all the users of forest products that it cannot fail to inspire confidence in the future.

Your Shade Trees

(*From page* 17)

mechanical condition to insure satisfactory drillability and shall comply with the manufacturer's guaranteed analysis; nitrogen to be derived, one-fourth from sodium nitrate, one-half from ammonium sulfate, one-fourth from organic sources, phosphoric acid from superphosphate, and potash from muriate of potash."

The amount of fertilizer given any tree should vary with the size and condition of the tree, its environment, the season, available moisture, etc. Various formulae and rules-of-thumb have been worked out by various investigators with no general agreement reached, but many seeming to have had a fair degree of success.

The basic rule-of-thumb which the writer has found reasonably satisfactory is to use three pounds of a 6-8-6 fertilizer to each inch of trunk diameter breast-high — varying the amount upward or downward as conditions seem to warrant.

Fertilization practice took a real step forward when someone introduced the punch-bar system, as it is known. This involves drilling a large number of holes in the root area with a crowbar, soil auger or power drill — introducing small amounts of fertilizer in each hole — and back-filling the holes with soil or compost. This method is still the most satisfactory for the small operator or home owner since no special equipment is needed.

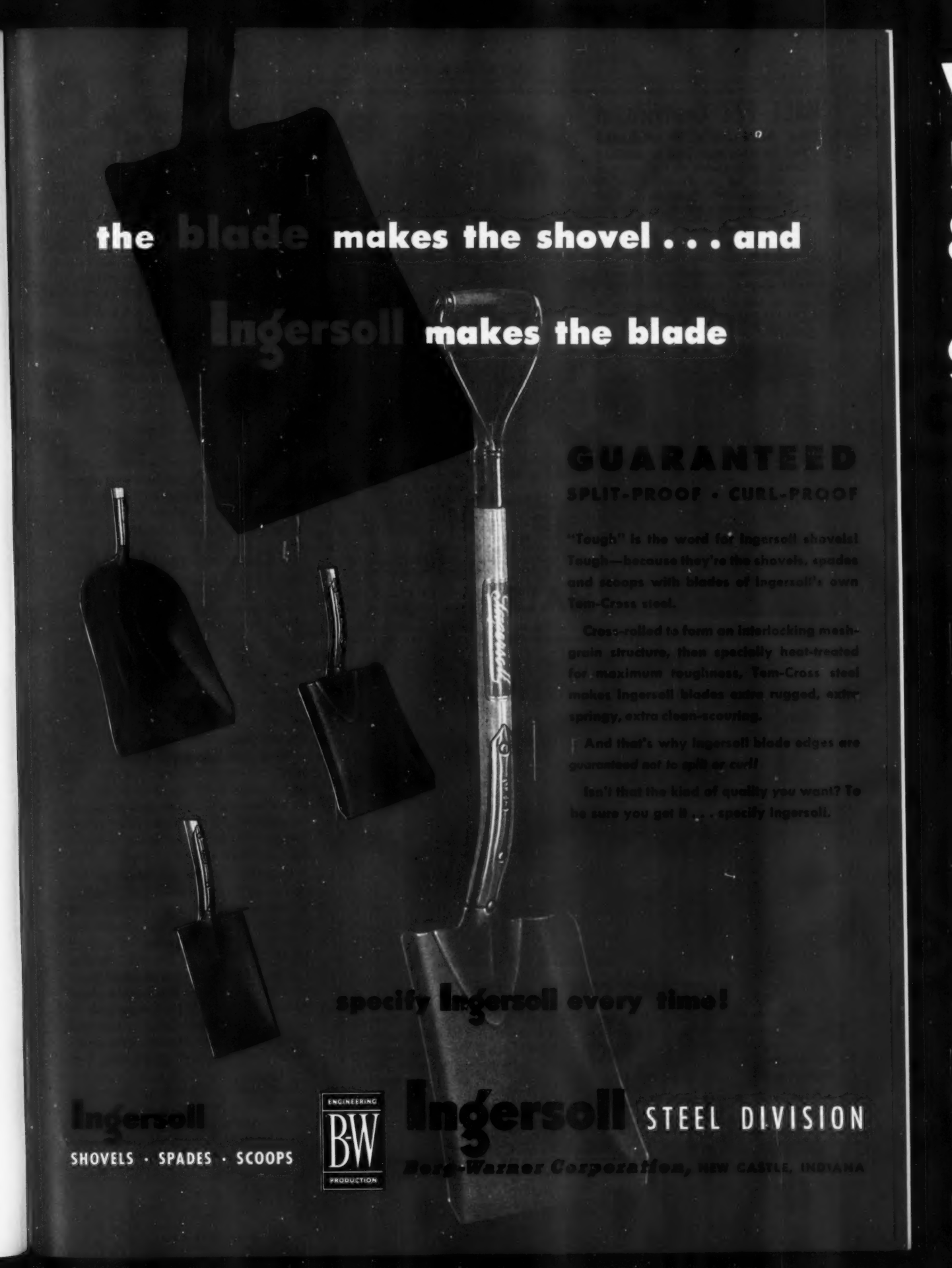
Various other techniques of applying fertilizer to trees are in use today, some of which employ air or water pressure to assure adequate distribution underground. One of the best systems involves the use of both air and water. Compressed air is used to drill the fertilizing holes, fracture the soil and blow in the fertilizer. If the soil is dry, water is introduced to make a part of the fertilizer immediately available to the tree.

If you have only a few trees to fertilize and wish to do it yourself—use the punch bar method by all means—but if you plan to have a commercial organization fertilize your trees, investigate the pressure systems for they are very much worth while.

Early Spring or Fall (September-October) are the most satisfactory for fertilizing trees.

Holes for the fertilizer should be

(*Turn to page* 40)


the blade makes the shovel . . . and
Ingersoll makes the blade
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Borg-Warner Corporation, NEW CASTLE, INDIANA

Your Shade Trees

(*From page* 38)

drilled a foot or two apart—the closer the better—and approximately a foot to 18 inches deep in the entire area beneath the foliage and for a little distance beyond. Place a double handful of fertilizer in each hole and fill with soil or humus, being careful not to spill the fertilizer on the grass as it may be burned.

In fine lawn areas it is good judgment to lift a spot of sod before drilling the hole and replace it after back-filling. It is well to complete the operation by soaking the entire area thoroughly—especially if the soil is dry.

If a fertilizer is chosen from a reliable manufacturer, applied properly in reasonable amounts, your trees will be healthier and better able to resist drought and many insect and disease pests.

Cheating the Beetles

(*From page* 25)

termine its life potential. Under this plan, symptoms of poor tree health are rated on a point system. Crown and needle condition, injuries, active beetle infestation and other tell-tale signs form the basis of judging. When a tree piles up five or more adverse points it's tagged for cutting.

This averages about one tree per acre. Average volume so far has been about 1500 board feet per acre including some fairly heavy winter windthrow. Windfalls are prime beetle bait, a hazard to all trees in the vicinity.

Logging started in May of last year. The Bert Wilkins Logging Company, on contract for Klickitat brought in some 800,000 board feet a month, stepping this up to about 70,000 feet daily in the fall months.

The loggers cover lots of ground. Three sets of power-saw fallers, three skidding "cats," a skid-mounted A-frame loader and three standard hauling trucks make up the show, which covered 3200 acres the first year.

Area covered might have been even more had it not been for a heavy concentration of blowdown in one area. Getting the stricken trees out was a boon to the woods and a blow to the beetles.

One section heavily damaged by wind yielded 95 Ponderosa pine windfalls. In another section the loggers picked up 110 thrown trees from 480 acres. Some of these were the very best lumber trees in the stand, and their wood would have been irretrievably lost had it not been for this operation.

Many loggers might shudder at thoughts of making ends meet on a cut of 1000 board feet per acre. But the Klickitat boys think little now of moving to a new landing twice a week, often every day. They just hitch onto their loader sled with the big D-8 cat, which in their opinion "can pull anything that has two ends," and away they go to a new setting. Even so, the skidding tractors sometimes have to go out a half mile to pick up their turns.

It's a short haul to the Goldendale mill—less than ten miles. It's mostly over county road or freshly dozed forest trail in rocky, dusty terrain. No graveling was attempted because costs had to be watched. The combination of short haul and good market conditions made the "light onceover" economically feasible.

It is planned to go over all parts of the Fibre forest now endangered or affected by a beetle infestation. About five million feet will be taken out each year until the tract is sanitized.

James Loeb, as resident forester in charge, pointed out that parts of the tract, largely western portions, do not currently warrant a going-over of this type. Nature herself, with tremendous waste, "sanitized" those areas with a severe blowdown and ensuing beetle epidemic 20 years ago.

Five million board feet of timber is enough to build 400 homes. By that much each year is the timber supply of the region extended as a result of this logging operation which leaves the forest looking better and in healthier condition than it was before. Besides its conservation aspects, the harvest is helping maintain a raw material supply for the Goldendale mill payroll for a number of years. Logs brought in from this operation are "extra" or "velvet," for if the forest were left alone to manage itself the doomed trees would make no lumber for homes or shook for fruit boxes. They would rot in the woods and vanish.

Let's Get Together

(*From page* 21)

members acted as deputy wardens, fining every one caught hunting in the preserve.

At West Liberty, Kentucky Kiwanians became alarmed about mass violations of laws protecting fish and animals during the mating season. No game warden was stationed in the area, and the Kiwanians used their influence to obtain a warden. Then, to promote good sportsmanship among local hunters and anglers, the Kiwanians reorganized a defunct rod and gun club. As a result of these two measures, out-of-season hunting and fishing have been greatly reduced.

Rotarians in Waynesboro, Virginia planted 8500 trees. The state conservation department supplied the seedlings, business men loaned trucks and other equipment, and labor was furnished by the Rotary Club and volunteers.

These examples are an accurate cross section of the conservation work that America's major service clubs are accomplishing. On the basis of this evidence, it seems logical to conclude that service clubs can be valuable allies of the conservationists. And the good work being done by a few service clubs indicates what might be accomplished if thousands of Kiwanis, Lions and Rotary Clubs become conservation-conscious.

The service clubs are just awakening to the importance of conservation. In all probability this great awakening will continue, but it can never reach its maximum potential until conservationists have an awakening, too. Those who are interested in protecting the nation's natural resources will have to recognize that the service clubs are allies, and make an effort to work with them.

This idea will undoubtedly seem odd to many people who mistakenly regard the service clubs as purely social organizations. Contrary to popular belief, Lions, Rotary and Kiwanis Clubs do much more than meet once a week to eat lunch, hear a speaker and shake hands.

Of course fellowship is important, but the service clubs put most of their emphasis on community service—hence the name "service club."

Now conservation has been added

(*Turn to page* 44)

Let's Get Together

(*From page* 42)

to the list, and it is proper to conclude that eventually the service clubs will devote as much time to conservation as they now do to getting out the vote, providing glasses for poor children, and operating summer camps for deserving youngsters.

Think what would happen if service club members and conservationists teamed up to demand better legislation in forty-eight state capitals! Think of the cumulative effect of many hundred conservation projects, carried out jointly by outdoorsmen and the service clubs!

This is not a mere pipe dream. Today service clubs are active in almost every American community, and their interests are slowly extending into the field of conservation. It is becoming increasingly obvious that service clubs and conservationists are traveling the same road toward the same destination. Yet each group seems almost oblivious to the other's existence. Isn't it time to get together?

Termites

(*From page* 26)

structed wholly or in part of wood which have been erected with no thought of termite protection, and who, like my Chevy Chase friend, suddenly find themselves confronted with positive evidence of the presence of termites.

Before discussing what to do after you know you have termites, it might be well to outline what you can do so you won't get them or to detect their presence if they have not given positive evidence of their existence by swarming.

An important thing to remember is that termites nest in the ground, not in the wood. They will die if they are prevented from maintaining contact with the soil because that is the source of the moisture which is essential to their existence. No wooden part of any building should be in direct contact with the ground unless as in the case of a pole barn, the wood has been adequately treated with a proven preservative.

There should be at least 18 inches of concrete or stone between the ground and untreated wood. If it is impossible to break a wood-to-earth contact, a trench should be

dug around the contact and the wood and the ground thoroughly soaked with an effective chemical.

Clean all loose wood and other debris from under and around buildings and keep such areas clear at all times.

Look for swarming insects especially after spring and fall rains. Trace them to their source and soak the ground with a proven chemical.

Look for mud-like, covered shelter tubes on foundation walls both inside and out. If you find tubes leading from the ground to wood, or if the insects swarm inside a building —you have an active infestation on your hands and this is what you can do about it:

1) Determine the extent of damage by carefully inspecting all wooden girders, joists, sills and floors. Probe with a sharp knife, ice-pick, or sound with a hammer. If the structural strength of the wood has been impaired, it must be replaced, preferably with treated wood.

2) Trace the termite tubes back to the point of contact with the earth, then destroy and remove the tubes and spray the walls where the tubes were located and the affected wood (joists, beams, sills, etc.) with a proven chemical. Don't be stingy with the chemical—give it a good soaking—let it dry—then come back and do it again. Dig a trench along the foundation to a depth of 18 inches and saturate the soil with the chemical.

3) An adequate and thorough treatment will be effective for about five years.

4) As to chemicals—there are a number of proven, effective, commercial, ready-to-use chemicals that are readily available and easily applicable for use in termite control. Look under "chemicals" in the yellow pages of your local telephone book and discuss your problems with representatives of one or more of the companies listed. Or you can, if you wish, write the U.S. Department of Agriculture in Washington, or to your State Agricultural College or Extension Service.

5) The best method of application is to use an ordinary compressed air sprayer. When you have taken care of the termites, a sprayer of this type is excellent for spraying insecticides on small trees, shrubs, and garden plants.

Texas Big Thicket

(*From page* 24)

bellow of an old bull 'gator echoes among the croaks of the bull frogs. When Texas was still a republic it was common practice for circuit riders of the region to hunt alligators and sell their hides on the coast. The swing these early clergymen made through the Thicket was once known as the Alligator Circuit.

The streams and bayous abound in perch, sunfish, channel cats, and lazy old mud cats. Black bass have hooked many a spoon beneath submerged logs in Pine Island Bayou. Fishing in the Big Sandy is fair. Old gravel pits near Cleveland are stocked with perch, bream, and bass.

At one time wild game was plentiful in the Thicket. Old timers recall piney woods hunts which lasted for days, with hunters from all over southeast Texas congregating at some wilderness camp with dogs of all descriptions, shotguns, rifles, and professional cooks. Deer was the most sought after game, but hunters brought in turkey, squirrel, quail, and even bear meat. Game is still abundant in this huge forest area.

The Big Thicket, of course, has hosts of winter bird residents—tanagers, warblers, robins, and many others.

Herons and egrets fly in each evening from the coastal rice fields to roost in the tree tops. Gulls and terns, bored with the fare washed up by the Gulf surf, fly inland for food.

The Thicket is big and virile like Texas, but without careful conservation and reforestation it might dwindle like the tribes of redmen which once found it a refuge. One Texas organization, the Outdoors Nature Club of Houston, has established the Little Thicket Nature Sanctuary of 450 acres on headwaters of the San Jacinto River, near Evergreen, Texas. The Sanctuary is almost adjacent to its big predecessor. Club members hope to demonstrate what can be done to perpetuate the natural beauties and recreational facilities of such fading forest glories as the Big Thicket.

With the help of this and other such organizations the huge Texas natural wonderland can be saved for future generations.

Grandpa Was a Logger

(*From page* 16)

the radiator, and a stick that thin will be broken before it can punch the core. It'll work, I tell you." He paused and bent an angry eye on Slader. Then he took a letter from his shirt pocket and handed it to Mr. Botts.

Slader must have had an inkling of what the letter was about, for he stirred uneasily a couple of times, and then hurried out of the shop. I stepped over to the door and watched him go, and the last I saw of him he was running so fast toward his Model T. that his vest pockets were dipping sawdust.

Mr. Botts handed the letter to Grandpa. Then he turned back to Williams. "So you're a field trouble shooter for Big Boy Tractors and a mechanical engineer?" he asked.

Williams nodded. "That's right, Mr. Botts," he said. "Joe Slader was milking us both, with the commission he got from Big Boy and the wages he got from you."

For a moment Mr. Botts looked hurt. Then he turned to Grandpa. "Mike," he said, "I'm eating crow. Will you get my logs out for me?"

Grandpa looked at Williams with no visible sign of pleasure. "Do you think that boiler plate doodad will make 'em work?" he asked.

Fred said, "Let's try it."

"Then let's get on with it," snapped Grandpa. "We got a contract to fill."

Two hours later Fred was ready to make the test run. Then for the next five minutes he reminded me of a cowboy riding an unbroken horse in a wild west show.

The cat bucked the brush from every angle, turning, twisting, and smashing straight ahead. The boiler plate nose bulled the brush aside and the endless treads crushed it underfoot.

Finally, Fred swung back and pulled up to where Grandpa and Mr. Botts stood watching him. Mr. Williams was nodding very quietly, but a wide grin split his face. "It'll do," he said. "And I'd like to take Mr. Sweeney back to the factory with me to show us how to build woods tractors."

Grandpa roared, "You didn't think I messed with these tin horrors because I liked 'em, didja?" He turned to Mr. Botts. "You double-crosser,"

he snapped. "You couldn't pay me my wages. So these buckets of bolts had to produce or I'd never get paid. And as soon as I get my money I'm quit—"

"Mike Sweeney," snapped Mr. Botts, "you're fired!"

Grandpa carefully pulled his last year's hat down until it rested on his thick black eyebrow. "I will," he said with dignity, "tell you myself when I'm ready to quit, Mr. Botts."

Washington Lookout

(*From page* 4)

crease the construction of forest access roads is not likely to arouse opposition from the Republicans. During the past several years access roads have been recognized as essential to the production of more timber and to efficient management for sustained yield of forest crops.

Each platform phrases and rephrases the ideals and objectives of the respective parties until patterns are formed which reveal some of the fundamental differences. Nowhere are the distinctions more clearly shown than in the planks dealing with water and river basin development.

The Democratic platform pledges "continued full and unified regional development of the water, mineral and other natural resources of the Nation, recognizing that the progress already achieved under the initiative of the Democratic Party in the arid and semiarid states of the West, as well as in the Tennessee Valley, is only an indication of still greater results which can be accomplished.

The Republican platform starts from about the same point when it comes out for "continuous and comprehensive investigation of our water resources and orderly execution of programs approved by the Congress." The next paragraph reveals the Republican desire for "greater local participation in the operation and control, and eventual local ownership, of federally-sponsored, reimbursable water projects."

Then, as if to clarify and clinch the Republican position, the platform reads: "We vigorously oppose the efforts of this national Administration, in California and elsewhere, to undermine state control over water use, to acquire paramount water rights without just compensation, and to establish all-powerful federal socialistic valley authorities."

Here, again. the lines are drawn.

Editorial

DID STOCKMEN OUTFOX ELEPHANT?

Experience indicates that political party platforms should not necessarily be regarded as unshakeable foundations upon which will rest our unalterable future and well being. Yet they should be closely examined for trends and declared intentions which, if fulfilled, could affect our way of life.

If you'll recall, maneuvering to select a candidate by far overshadowed the almost behind-the-scenes drafting of both party platforms, and their very release came so much as an anti-climax that delegates paid them scant attention until the last echoes of convention hubbub had faded. In such a hectic atmosphere, it now appears that several energetic spokesmen for the livestock industry harnessed the GOP elephant with a public lands plank not in keeping with traditional Republican policy—one which should be given a more acceptable interpretation before voters go to the polls.

(It is understood the same stockmen interests also made an attempt to infiltrate the ranks of the Democrats, but failed because those policy makers had been alerted during the intervening two weeks between conventions.)

If one were not familiar with the long standing resistance of the stockmen to any curbs on their use of western public grazing lands—no matter how gravely it might affect the needs of neighbors seeking water for irrigation or other domestic and industrial uses—the plank they foisted on the Republicans might well be shrugged off as the usual brand of inconsistency and mumbo jumbo in which platforms are phrased to mean all things to all men.

One paragrah of the GOP statement reads: "In the management of public lands and forests we pledge the elimination of arbitrary bureaucratic practices. To this end we favor legislation to define the rights and privileges of grazers and other cooperators and users, to provide the protection of independent judicial review against administrative invasions of those rights and privileges, and to protect the public against corrupt or monopolistic exploitation and bureaucratic favoritism."

At a quick reading, the above pronouncement appears quite commendable. Certainly most of us decry "arbitrary bureaucratic practices," but at the same time we should take every precaution to keep that label from being applied to honest efforts to protect watershed land from despoilage or being used to the disadvantage of the greatest number of people.

As the *Salt Lake Tribune* (Utah) has so aptly editorialized, "We would have liked to see a paragraph inserted in the platform to the effect that the rights and privileges of grazers and other cooperators and users should at no time supersede the rights of the majority of the people depending upon watershed land for water—their very life blood."

The red flag for those of us who for years have been keeping a watchful eye on this segment of range users seeking one-group advantage against the public interest is that phrase in the GOP platform reading "rights and privileges of grazers."

We cannot believe the GOP wittingly allowed this one group to be singled out above all the users of the public lands. Nor do we agree with those who have charged that this unfortunate wording constitutes Republican endorsement of the principles set forth in the stockmen's "Proposal for an Act." (See *American Forests* editorial of February, 1952.) Certainly no GOP legislator, nor Democrat either, was willing to sponsor this kind of an act in the 82nd Congress.

It does seem, however, that General Eisenhower and party spokesmen should interpret or at least minimize the questionable utterances already on record by reiterating the concept of multiple land use first laid down by a Republican president, Theodore Roosevelt, and administered by Secretary of Agriculture James Wilson (also an AFA president) and by Gifford Pinchot. This sort of action would set a lot of minds at ease.

As for "independent judicial review against administrative invasions of those rights and privileges," we can envisage conditions under which a long court battle, with the customary delays through appeals to already over-taxed judges, could allow grazers to continue excessive use of watershed lands until permanent damage might be inflicted. Reductions of grazing permits may hurt at times, but the economic health and welfare of the entire region should always be the first consideration.

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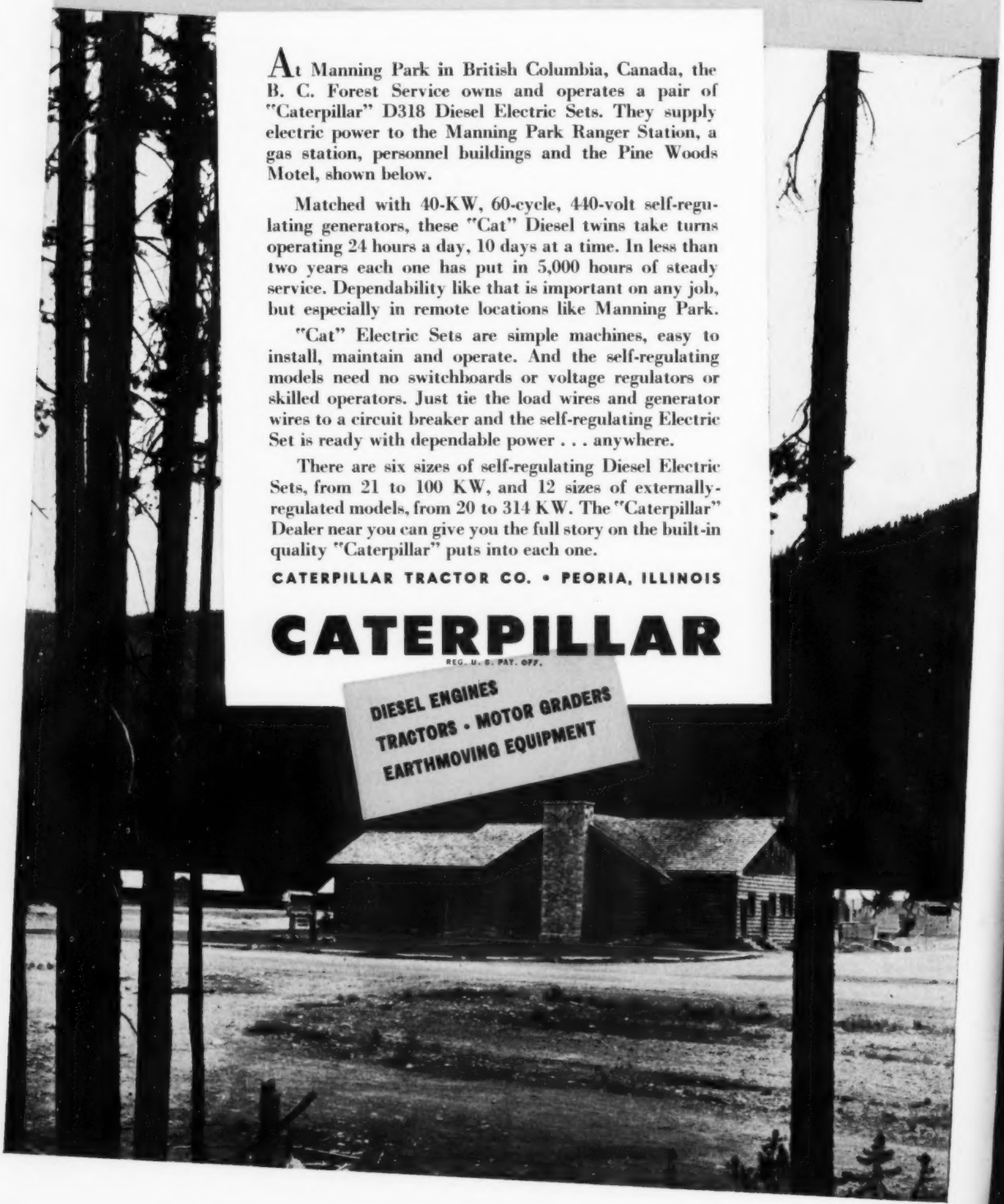

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